

STUDY OF SOILS IN NATURE CLASS

Easy Method of Approach to Difficult But Practical Subject.

BASIS OF GOOD AGRICULTURE.
observing the Natural Agencies That Make Soil—Frost, Heat, Water, Winds, Plants and Earthworms.

For early spring work in nature study in the common schools," said Prof. Cummings at the university yesterday. "The interesting subject of soils is taken up. We take the class into the field, have each one take a handful of soil, and ask each one to tell what he finds in it. As each one sees the small stones, the bits of wood, the roots, etc., he may become far enough interested to ask how the soil is made. This is the time to take a journey to the 'mill' in which the soil is made—the mountain side. On the mountain, the following procedure might be taken:

- THINGS TO BE OBSERVED.
- At the foot of a cliff, for example: (1) Notice outside conditions, the cracks and surface structure; (2) use a hammer to note firm condition of inner rock; (3) compare the angular fragments at the base of the cliff with the rounded pebbles in the stream; (4) observe the erosion by which this change is produced; (5) notice any indications of the action of frost or heat on the rock; (6) note what parts the roots of plants may have taken in the process; (7) observe how organic matter becomes mixed with the talus; (8) observe the action of the wind in blowing sand and soil; (9) look for indications of chemical action on the rock—rust, yellow colorings, etc.; (10) study the means by which the soil is carried from the foot of the cliff; (11) observe the formation of gravel cones at the mouths of gulches; (12) the gravel and sand further down, the clay, still further, while the large stones remain in the canyon.

MEANING OF THE FACTS.
It requires intelligent questioning to bring out from the class the meaning of the phenomena thus observed. That best will split a cracked stone, if moisture fills the crevices; that heat and cold may do the same thing; that the rocks split off in segments or layers with the change of temperature and the unequal shrinkage of parts of the solid mass; that on the Sahara desert large stones have been known to burst open from the expansive force of the heat in the daytime and the contractive force of the cold at night; that growing plant roots may split open the rock in places where cracks and fissures are not visible; that the wind may aid in the same work; that water may dissolve the softer parts of rock and make the first openings; that animals may dig in some soils and in some cases, chemical action may do so likewise—these are topics to each of which one or more lessons may be devoted, showing how soil is made. Frost is nature's hammer in breaking up the soil, and is the best fertilizer we have. One method may report the bursting of a water pipe out of a glass pitcher by the frost; another will tell of the frost-work on pebbles; another will measure how deep the soil is from a ploughed field, and in solid ground, showing that the frost penetrates much further in the solid than in the loose soil. So the action of the wind in carrying sand against boulders and slowly wearing them off, may be explained. The action of the cement that holds the particles of sand together in the form of a sandstone and its work in cave-formation by dissolving the lime rock, together with its production of stalactites, etc., and its work in fertilizing lands by the deposit of the matter it carries suspended or dissolved, from the hillsides to the field or farm—these facts are readily shown by experiment.

EROSION BY WATER.
Fill a strong clear glass bottle with ordinary pebbles washed clean. Pour in some clear water. Then shake the bottle vigorously for a minute, and the water becomes muddy; the stones have been ground down by the attrition of the surfaces. The almost incredible results of the erosive power of water may be imagined by listening to the sound of the rolling stones in the rapidly moving mountain streams. Get a copy of Tyndall's "Forms of Water" (Humboldt Library, 15 cents), and study the action of water and especially of glacial action in erosion. The flint-marble machine, showing how the flints (marbles) are made by erosion, was in explanation. A model of this machine may be seen in the training school.

PLANTS ATTACK ROCK.
Plants aid in the disintegration of rocks to make soil. Just as large stones are split open in the quarry by drilling holes into the rock, and driving wooden stakes into the holes. When these stakes absorb moisture, the rock will split open from the expansive force of the wood, due to the capillary attraction of its particles. The roots of a boxelder tree in this city grew into the crevices of a rock foundation and forced apart the stones. Place a piece of marble with a smooth surface in a box and cover the marble with soil. Plant seeds therein and water them. At the end of the season, it may be found that the roots have eaten small holes in the surface of the marble, showing that the plants develop acid (hydrochloric) at the tips of their roots. Plants are among the most powerful agencies that eat away the solid rocks.

THE EARTHWORM.
Examine the plowed soil on a spring morning in a place where the earthworms abound. A number of small castings, or mounds of earth made by these industrious creatures will be found. Have the children gather the castings from a square yard and carefully weigh them. Compute from this weight the amount of soil pulverized in a day in one acre of ground by these small creatures, and the result is marvellous. Their work may weigh many tons to the acre. Place an earthworm on a sheet of paper and allow the sun to shine upon it. The worm manifests symptoms of pain. Its contents its body with water, and its contents will secede. This shows that the worm, breathing through its skin, requires moisture for its mode of life. The creatures are found to be blind, and stay underground unless the surface of the ground is wet after a storm. Then they come to the moist surface in the night time, and as long as the ground is moist, the creatures live. As soon as the ground dries, or day approaches, they burrow into the earth again. If they get upon a hard path or pavement and cannot burrow again, their skin dries and they are suffocated, for they do not know in which direction to crawl to get to the soft earth again. This fact has led some people to imagine that it sometimes rains earthworms—a fancy that is, of course, without foundation. Darwin says these creatures have a sense of hearing, only that it seems to be all over their body. They are among the best of soil pulverizers, by grinding up the soil, and making it fine and pliable. They do not seem to injure vegetation, but appar-

Human nature is the only kind of nature that makes a mistake. Don't try to get along without

HUSLER'S FLOUR

PROMISES NOT FULFILLED.

Rock Crusher Belonging to Moran Still in City Creek Canyon.

Although he has made several promises to do so, Contractor P. J. Moran has not yet removed his rock crusher from the mouth of City Creek canyon. In order to make the mouth of the canyon more beautiful and safer for driving purposes the council decided last fall to remove its rock crusher and to have Moran's moved and also to stop the hauling of gravel from the hills along the sides of the canyon. The canyon has been cleared of all those objectionable features with the exception of Moran's crusher and in order to call the matter to the attention of the city council again Cashier C. S. Burton of the State Bank of Utah, has written a letter to Councilman Wells of the Fourth precinct, in which the importance of having the crusher removed is emphasized very forcibly. The letter follows in full:

Hon. R. S. Wells, Councilman Fourth Precinct, City:
Dear Sir—As you are aware, I have for some time past taken a lively interest in the boulevard and City Creek canyon, and in the improvement contemplated in that neighborhood.

In the spring of last year, I had the pleasure of assisting in taking the council committee and the Commercial club committee over the proposed route, and at that time the situation was pretty well canvassed by the Commercial club committee and also by the members of the city council.

Among other things, it was understood that the taking of gravel from the face of the canyon, and thereby marring its beauty, should be stopped; that the road from the city's brick stables to the first power tank should be sprinkled, the distance being only about two of our city blocks. It was also agreed that if Mr. Moran were permitted to use his crusher last summer, that he would move it away early this spring before visitors would begin to use the road leading to one of the city's beautiful resorts. However, the mill still stands there, an eyesore in that neighborhood, a menace to public safety, and in that sense, just a plain common nuisance. Mr. Moran knows this just as well as any other citizen, and to my personal knowledge on two different occasions has promised to remove it.

One gets all sorts of advertisement out of its beautiful canyon and splendid road leading to the resorts located there, while we in Salt Lake have permitted the neighborhood I have mentioned to almost ruin one of the most beautiful parks in this valley.

If the obstacles now existing and well known to you and to other members of the council were removed, and the little money spent on the planting of some trees, we could justly boast of a most beautiful drive and pleasant resort right at the city gates.

In talking with James D. Murdoch, a member of the Commercial club committee, he requested me if I wrote you to express his feelings on this subject substantially as hereinafter outlined, and with emphasis. Yours very truly, CHAS. S. BURTON.

AMUSEMENTS.

Theater—"Camille" was given with marked credit as a matinee yesterday afternoon. Mr. Mayall as Armand Duval and Miss Elsmere as Camille both played their roles with capability before a large audience, and one that wept and applauded alternately. Last night the company went back to "Men and Women," and this evening and tomorrow will appear in the same place, winding up their summer's engagement with it, and then departing for the coast.

Tout Concert—The sale of seats for the Tout concert commenced at the office of the Clayton Music company this morning and at the Information Bureau building on the Temple block. Marked public interest attaches to the appearance of the Tout sisters on Monday night at the tabernacle. Last night Miss Maggie Tout sang "The Marvelous Work" from "The Creation," with the big choir, and the manner in which she did so not only pleased but astonished her auditors. Her voice is of a purely lyric character, and possesses a depth and range that is beautiful to listen to. The concert should be one of the most notable midsummer events of recent years.

Casino Park—The Jane Kellon company, which closes its engagement on Sunday night, played to big business again at the Casino Park open-air theater last night. Commencing Monday night the Cassidy-Gordon Opera company will hold the boards for a summer's run. It consists of twenty-four singers, dancers and comedians. Tonight will be ladies' night.

AT THE RESORTS.

Saltair—All roads apparently lead to Saltair today. Judging from the crowds that have been going out on every train since early this morning, the double event that is attracting the public is the farewell of the Royal Hawaiian band and Stephens' day at the beach. A great aggregation of Utah's soloists and choral singers are gathering at a special program in which the band and the local vocalists are participating will be a great feature.

GETTING READY TO FIGHT THE LAW

Harriman Legal Talent to Gather In Traffic Director Stubbs' Office Monday.

PARLEY L. WILLIAMS ON WAY.

Oregon Short Line Council Left Last Night to Take Part in Big Conference.

Behind the brief announcement in last night's "News" that Parley L. Williams, counsel for the Oregon Short Line, would leave for Chicago last night lies a story, one to the effect that the railroads generally do not propose to submit tamely to the restrictions placed upon them by the recent legislation in the halls of Congress regarding the interstate commerce law. A conference of all the general attorneys and solicitors of the big Harriman system has been set for Monday in Chicago, the place being the offices of Traffic Director Stubbs. While, of course, there is nothing given out regarding the import of the meeting it is generally conceded that the legal talent gathered together will proceed to scan the bill and probe for flaws.

Of the meeting the Associated Press sends out the following dispatch today from Chicago:

"The amendments to the interstate commerce law which were passed at the recent session of Congress, are to be discussed by general attorneys and solicitors of railroads running west out of Chicago, at a meeting to be held here on Monday. It is decided to make a test case the line of battle will be planned and all details arranged. This conference will be the outcome of several smaller ones which have been going on at the headquarters of the several great systems during this week. The Harriman conference has been in progress in the office of General Manager Stubbs and at this representative from each of the roads has been in attendance. Similar meetings have been held by the attorneys who represent the Rock Islands, Frisco interests, the Santa Fe and the Hill lines.

"The roads do not propose to surrender any of their rights to the commission without a fight, and as the law goes into effect in 60 days it was deemed advisable to consider the plan of campaign."

ELKS HIKE TOMORROW.

Big Preparations for the Trip to Denver Are Under Way.

The Rio Grande ticket office today has been made the headquarters for the Utah Elks who are going to Denver tomorrow evening. In all there are some 200 of them who are proposing to be on hand at the big grand lodge reunion next week and every last one of the 200 wants a lower berth on the shady side. Mr. Benton's office is endeavoring to bear up under the strain.

The special train leaves this city at 5:15 p. m. tomorrow and consists of date of four standard Pullman's, one observation car, one tourist car and a baggage car. The train is routed via the Denver & Rio Grande and the Colorado Midland. Tomorrow morning the regular Park City train will take a Pullman up to the Park and will return in time for the delegation to join the Salt Lake contingent. The tourist car will be taken possession of by the three bands that are to accompany the Elks. These musical organizations are held in hand, the Park City organization and the Juvenile band which has been rigged out with a most fetching zouave uniform in purple and white. The itinerary follows:

Leave Salt Lake (Rio Grande West) 7:15 p. m.; leave Provo, 8:30 p. m.; leave Grand Junction, 4:35 a. m.; arrive Glenwood Springs (Colorado Midland), 9:00 a. m.; arrive Leadville, 1:30 p. m.; leave Leadville, 2:20 p. m.; arrive Manitou 7:00 p. m.; arrive Colorado Springs, 7:20 p. m.; leave Colorado Springs, 10:30 p. m. Passengers may occupy sleeping or dining cars, or may take their meals at the hotel where they are being prepared for shipment east on tonight's train.

A stop will be made long enough at Glenwood Springs to permit all to have breakfast, take a dip in the famous plunge pool and march around the town of the strains of "A Hot Time" At Leadville the party will lunch and also vociferously advertise the fact that they are from Utah. Colorado Springs will be another place where a leg and lung-stretching will be in order for two or three hours. In every town visited the public committee will unload a ton, more or less, of pure reading matter devoted to Utah and her interests. It is tacitly understood that every passenger on the Elks' special when he signs his ticket agrees to boost for Utah first, last and all the time.

General Agent Harding of the Colorado Midland will accompany the train and constitute the supreme court of appeal in all matters passed up to him by the transportation committee, comprising Tom D. Pitt, chairman; G. R. Cleveland, A. W. Raybould, Thomas Homer and C. S. Palmer of local lodges.

Just ahead of the special the Oakland, Cal. delegation will go through on the

Brains are Built

from certain kinds of FOOD.

Grape-Nuts

Furnish It.

How to Make Nervous People.

"America has become a land of nervous emotionalists largely owing to our sins against the dietary health laws of nature. Only outdoor exercise in a cold five mile would enable vigorous individuals of our species to digest the clouds of food which modern civilization forces upon them by sedentary occupations," writes Dr. Felix Oswald.

Brain workers must have different food than day laborers, because brain work uses up parts of the food and nerve centers, while physical labor uses up other parts of the body. A food for brain workers has been prepared by scientific food makers and called Grape-Nuts. It is a pure, natural food made from selected parts of field grains known to contain the natural phosphate of potash and other elements used by the system in rebuilding and repairing the brain and nerve centers. This food is skilfully cooked at the factory and is ready to be served instantly either cold with cream, or as a hot breakfast dish with hot milk or cream poured over it. All first-class grocers sell Grape-Nuts, and the Postum Co., at Battle Creek, Mich., make it.

regular train. They are due to arrive here tomorrow morning and will stay over until 3 p. m.

NOT THERE YET.

Burlington Experiences Some Trouble In Breaching World, Wyo.

(Special to the "News.")
World, Wyo., July 13.—Numerous stories have been sent out to the effect that the Burlington had reached this place with its Frannie-Thermopolis extension, but such is not the case. The line has been graded to World and the "Y" and yards are now being graded. The track layers are several miles down the river, but will probably reach this place by the end of the week, and in plenty of time to transport the Shoshone land seekers who desire to register here. The Burlington has had trouble with its track-layers, the men getting drunk and quarreling among themselves, and heavy rains have also interfered with the work, but the company promise to have trains running into World in a few days.

TO STUDY IN SALT LAKE.

Two Jap Army Officers to Enter Employment of Short Line.

San Francisco, July 12.—Ten Japanese army officers are, it is said, to be given railroad positions on the Southern Pacific and allied roads. Three of the lieutenants are to be stationed at the San Francisco headquarters of the Southern Pacific, one at Portland, Or., two at Salt Lake, one at Los Angeles, one at New Orleans and two at Omaha.

The object of sending these army officers to this country is to have Japan, through their experience, improve its railroad service in traffic and operation, and also its railroad accounting methods.

CANCELS INTERSTATE PASSES.

San Francisco, July 12.—Congress having passed the railway rate bill, with its sweeping feature prohibiting the issuance of railroad passes, President Harriman, of the Southern Pacific, has sent out orders here to cancel the annual interstate passes, which the San Francisco officials of the road sent out at the beginning of the year.

The cancellation of Congress will not go into effect until the end of this year, because the law in question does not become operative until that time. The congressional law has nothing to do with the company's annual passes within the limits of this state.

SITE FOR NEW PLANT.

Rudolph Orman of Chicago will establish a plant in this city for the manufacture of railway supplies, and has bought for \$25,000 half a block of land from H. D. Scott at Fifth West and Sixth North streets as a site.

OPEN TO CHERRY CREEK.

The local railroad offices have been notified that on Monday next the Nevada Northern will be open for operation as far south as Cherry creek, with daily trains except Sunday. The tariffs are now in the hands of the printer and will be mailed in a few days.

THOS. LEE GOES FARMING.

Promotions are announced and official circulars received in this city of the same in which several Delaware, Lackawanna & Western men well known here are involved. Thomas Lee, general passenger agent, has resigned and has bought 8,000 acres of land near Idaho Falls and proposes to get next to nature. His successor is Geo. A. Cullen who frequently visited this city in a minor capacity. H. N. Butternfield, another man who often came to Salt Lake, has been appointed division passenger agent at Newark, N. J., vice C. P. Barrett promoted.

BOUGHT 6,000,000 POUNDS.

Mark Harris, the well known wool buyer of St. Louis, left for home on the Overland limited this afternoon, having closed a most successful wool season. Before leaving he stated that he had purchased in this territory 6,000,000 pounds of wool at prices varying from 17 to 24 cents. The price paid was on the average slightly higher than last year. Mr. Harris also did not equal last year's purchases by full half.

DIED ON THE TRAIN.

Ed N. Taylor, a tourist from Cedar Rapids, Iowa, who was traveling with his wife homeward bound from Southern California, died on the Salt Lake Route train at Calliente last night. The remains were brought to this city and taken to a local undertaking establishment where they are being prepared for shipment east on tonight's train.

SPIKE AND RAIL.

C. W. Green, traveling agent for the

Big Four, is numbered among the eastern railroad men in this city today.

J. Harry Carson of Carson-Harper company, Denver, is here today in the interests of the railroad red book.

W. A. Durley, freight and ticket agent at Mt. Carmel Ill., for the southern railroads, is here on a vacation trip.

J. W. Kerr, traveling agent for the Union stock yards at St. Joe who has been in Idaho for 10 days past loading sheep, is here today and leaves for home tonight.

The Alexander party, 15 strong, arrived from Alabama this morning, coming in from Colorado Springs on the Colorado Midland and the Rio Grande. They leave tonight for Yellowstone park over the Short Line.

H. M. Cushing, traveling passenger agent for the Denver & Rio Grande, accompanies the special train carrying the soldiers from Ft. Douglas en route to Ft. Russell for summer maneuvers this afternoon. The troops from Ft. Duchesne will be picked up at Mack, Colo., tomorrow morning.

The agricultural bulletin issued by the passenger department of the Union Pacific for the state of Nebraska, estimates that from the yields shown, the following deductions may be made: 1. The total yield of wheat for Nebraska this year will approximate 22,000,000 bushels. 2. The total yield of rye, 2,000,000 bushels. 3. The total yield of oats, 50,000,000 bushels. 4. The corn crop promises better at the present time, than that of last year. 5. The alfalfa crop will probably surpass that of 1905 both in quality and yield.

WHITMAN'S Confections!

If you desire to treat your wife or sweetheart to a nice box of candy

BUY WHITMAN'S CONFECTIONS!

They are fresh, pure and delicious.

HALLIDAY DRUG CO., S. W. Cor. 1st So. and State Sts.

BOWERS & JEWELER

ALBERT S. REISER, JEWELER. 18 E. 1st South. Bell Tel. 206-K. Watches, Diamonds and Jewelry. Repair Work a Specialty.

CREDIT TO ALL

An honest store for honest people to buy up-to-date Men's, Youth's and Boys' Clothing; also Elgin and Waltham watches on easy weekly or monthly payments at lowest prices is the old reliable.

HUB CLOTHING HOUSE, No. 50 East First South.

Maybe You Live Out of Town

And can't come in. Don't let that keep you from getting M. & P. Paint.

Write for color card and tell us what you want. Just as much care taken as though you were here in person.

MORRISON-MERRILL CO. 28 Main St.

Haine's Grape Juice (WHITE) Welch's Grape Juice (CONCORD)

Nothing better for invalids. Strengthening and appetizing. Pure and unfermented. Very excellent for table use as it is just like a light wine. Pints and quarts, per bottle 40c and 75c

FREE DELIVERY TO ALL PARTS OF THE CITY. PHONE 374 BOTH PHONES.

Willes-Horne Drug Co., By the Monument, Deseret News Building.



CANVAS PUMPS!

White and Colors.

\$2.45 for \$3.00 Values. \$1.75 for \$2.00 Values.

ROMNEY'S DEPENDABLE-SHOE SALE! JUST LOOK

LADIES' WHITE CANVAS \$1.25 for \$1.50 Values. \$1.55 for \$1.85 Values. \$1.75 for \$2.00 Values. \$2.15 for \$2.50 Values.

PATENTS, TANS, KID OXFORDS AT

Great Reductions!

GARDNER DAILY STORE NEWS.

GLOVES FOR EVERY OCCASION

DRESS, DRIVING or WORKING GLOVES.

Dress Gloves, in Kid and Reindeer, lined and unlined, at \$1, \$1.25, \$1.50 and \$2.

Medium weight Driving Gloves, in Calf, Buck and Reindeer, at \$1, \$1.25, \$1.50 and \$1.75.



The Hansen Working Glove is the most satisfactory Glove to be had for rough usage. We have them in Horsehide, Seal, Reindeer, Buckskin and all the best wearing leathers. They are priced at 75c, \$1, \$1.25, \$1.50, \$1.75 and \$2.

Our 4-ply Linen Collars represent the most stylish productions. They are the delight of good dressers. 15c, 2 for 25c. Sizes for Men and Boys.

"E. & W." Collars and Cuffs, at 25c; nothing better.

Sold the Gardner way—a little better goods for a little less money.

ONE PRICE. J. P. Gardner 136-138 MAIN ST. THE QUALITY STORE.

"The Paris." Big Semi-Annual Clearance Sale!

IS STILL IN FULL BLAST.

TODAY IS THE BIG DAY OF THE SALE. Everything has been gone over. Slow sellers have been passed over to lower prices. Hundreds of bargains have been thrown on to special sale tables. Lower prices have been made throughout the entire house. Everything is on the move. It's a regular clearing up system. Not an item will be carried over. Join the big crowd today and share in this Great Bargain Event. Following are some of the Extra Specials:

MILLINERY AT ONE-HALF.

Here is your chance to secure a pretty Hat at one-half the regular price. One lot Children's Straw Sailors, trimmed with streamers, 10c. Children's good quality Sailors, immense variety to choose from, at 39c.

Shirt Waist Suits. A jaunty hot weather Suit, Eton, Pony or Coffee Jacket, full circular skirt. Special at \$1.98.

Parasol Specials. One lot White Linen 79c. One lot White Linen 98c. One lot White Linen \$1.25.

All our high grade Parasols at this sale at absolute cost.

Skirt Specials. One lot White Linen Skirts, fully worth \$5.00 at this sale \$2.75. One lot White Linen Skirts, extra full, embroidered down front at \$3.48. One lot of White Sicilian Skirts, a regular \$1.50 Skirt, at this sale \$2.95.

During this sale every department in the entire house has been reduced from 25 to 50 per cent. Therefore be sure and attend this BIG BARGAIN EVENT.

EXTRA SPECIAL MUSLIN UNDERWEAR

Muslin Drawers, nicely trimmed, nice fresh goods just arrived, fully worth \$1.00 at this sale 23c.

A beautiful Muslin Skirt, Extra Special for this sale, \$1.28.

Corset Covers, Extra special for this sale 18c.

A pretty Muslin Chemise, An extra special for this sale at 58c.

OUR ENTIRE LINE OF CHILDREN'S DRESSES, EITHER IN WHITE OR COLORED, AT BIG REDUCTION PRICES.

One lot of White Linen Eton Jackets, fully worth \$2.00, at this sale at 89c.