## THE FORMATION OF THE SOIL

By Alfred Vivian,

d that has once been used by

In this way the growth gradually scomes more abundant. The plants this increases the fertility of the land the atmosphere.

both by being a source of plant food This peculiar property of legumiboth by being a source of plant food and by increasing the water-retaining power. Humus is a very important for it is undoubtedly nature's principal method of increasing the supply composition of the plants, acid subcomposition of the plants acid by these plants eventually because its plants and acid by these plants eventually because of the plant acid by these plants eventually because of the plant acid by these plants eventually because of the plant acid by these plants eventually because of the plant acid by these plants eventually because of the plant acid by these plants acid by the plants the rocks in such a way as to make more of the plant food available.

One of the products of decay or fermentation is carbonic acid gas, and this is dissolved in the soil water, and this gas-containing water is an im-portant help in disintegrating the

As the nutritive materials increas from these various causes the lower simpler forms of plant life are grad-ually replaced by those which are ore highly organized.
With the advent of plants, like our



other factors in the formation of soils are introduced. The roots secrete an acid substance that has a solvent effect on the mineral matter of the soil, and the roots themselves also

All are familiar with the tremendous force exerted by plants in breaking apart rocks and stones if once
process of converting the plant food
into available forms by means of good

The roots panetrate the soil some—
The second is to return to the soil times to great depths, and, as they by means of manure and fertilizers decay after the death of the plant, an amount of plant food equivalent to they leave little channels in the soil that removed by the crop.

When marketing lambs leave the dulis on the farm.

eperate 16 co-operative meat packing plants. While the farmers Union alone owns and operates 5,500 manufacturing plants of various kinds. ufacturing plants of various kinds and Pride yourself the American Society of Equity owns well bred stock.

Vegetation begins with the very simplest forms of plants, such as lichens and mosses, and is, of course, very scanty at first. These plants on dying become a part of the soil, all of the plant nutrients used by them being thus returned.

Frond that has once here made to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden with carbonic acid, as well as to introduce the carry down water laden water lad

Food that has once been used by ants is very readily made available succeeding crops through the prose of decay. The soil is now able clover, vetches, lupines, etc., are in-

to produce a larger crop, as it contains the plant food in the previous growth in addition to that added through the agencies detailed above.

In this way the growth gradually are the homes of numerous bacteria, which enable the plants to derive part on decaying give rise to humus, and of their food from the nitrogen of

ated by these plants eventually belecay, thus adding to its fertility. It will readily be understood the various agencies concerned in the formation of the soil do not act separately nor necessarily in any such but more order as that in which they have been of the sile.

As a matter of fact all the processes described take place simultaneous ly. The lower plants do not wait for rocks to be pulverized, for we see

simpler substances, with the result, form of silo for example, that huge deposits of rigid enough. limestone are formed in one place, and in another whole hills of sandstone. The soil is almost constantly mov-

ing, for some of the same agencies which form soils are continually carrying them away. Running water grinds the rocks, but at the same time transports the fine particles to lower levels. It outs deep valleys in the surface of the earth and carries away the debris, depositing it at various istances from its source.

This study of the formation of the

soil then suggests two things that the ist mechanically in breaking down farmer can do to prevent the ex-

Conservative marketing always pays

and not national questions. The most

# FAILURES OF SILOS

THERE ARE SEVERAL CAUSES OF FAILURE BUT THE ONE MOST FREQUENTLY ENCOUNTERED IS THE MISTAKE OF NOT PREPARING FOR THE OUTWARD PRESSURE OF THE SILAGE.

examined frequently, or they will

fall down as the staves shrink. Some-times the iron splices rust. Unless a

moved from its foundations or ever

The walls of a sile must be rigid or they cannot stand the pressure.

When the sides begin to bulge, air

can get between the silage and the

Brick siles without reinforcemen

have been failures because of the

pressure from the inside.

The modern sile is a structure with

air-tight walls and a height usually twice its diameter, and is strong enough to withstand the natural pressure of its contents when full.

This pressure is greatest from two to six days after filling. The silage at

this time begins to heat and settle

and, if the walls are not sufficiently

rigid to prevent any bulging, a consid-

erable loss of mlage will result. The

Not proper shape and too

blown down.



Some of the failures of silos have been due to carelessness in filling, but more often to faulty construction

Formerly many silos were made by sheathing one of the bays in the barn. With these siles and other forms wooden square silos a lining must be built across the corners and the silage such organisms as the lichens growing well tramped down along the edges on rocks from which one would think or there will be considerable loss of It impossible to obtain food.

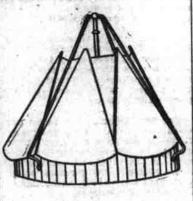
If the lichen is removed, grooves or furrows will be found on the surface ever, has become less common, and of the stone, due to the action of the but few square silos of any kind are plant,

Nor are all soils formed directly silos are built inside of a barn they from the original rocks, for one of the are often circular. The octagon silo effects of weathering, etc., is to sep- is an improvement over the square arate such rocks as the granites into form, but as a rule the walls of this form of silo have not been made

Too often the walls of silos are not made air-tight. Unless the walls of wooden siles are made air-tight, with into the joints, much sliage will be



are not air-tight at the foundation. A resident of San Bernardino, Calif., The shrinkage and swelling of staves Its only two miles to town when a declares that for many years he has breaks the cement, which must be man goes to renew a note but it's made a good living on one acre of frequently mended. Some losses have hever less than 10 when the boys land. He sold \$1600 worth of truit occurred because the ends of the start for the circus.



Patent Roof of Silo, open.

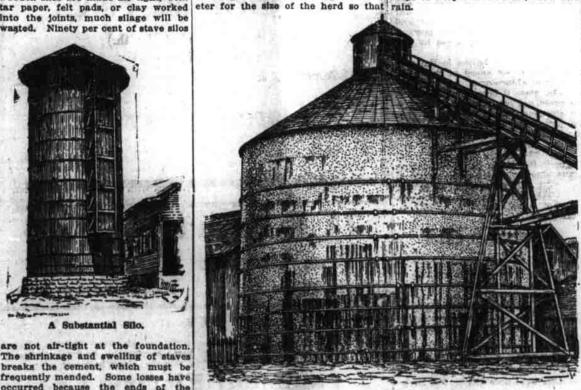
the silage spotled by too long exposure of the surface. In one case man with a small herd built a silo n his barn 18 feet square and 16 feet high. After two year's trial he gave up the use of the silo in disgust because his silage did not keep.

A year or so later he sold his farm to a more progressive man, who built partitions across the same silo, making four small siles out of the large one, and had no difficulty in obtaining good silage for his stock. The silo should be deep. The deeper the silo the better the silage.

no loss from surface exposure It is desirable to prevent sliage from

freezing. The double wall concrete building tile accomplish this object as well as any. Stone silos prevent frees ular as possible, and the diameter ing, but many owners of stone silos should be the same, from the bottom do not like them because moisture to the top.

A mistake sometimes made was in rots silage along the edge. A roof building the allo of too large a diam- helps to keep out the frost, snow and



A large concrete Silo which failed.

## THE CARE OF EXTRACTED HONEY

and of the honey-extractor, has af-forded beekeepers the means of taking out of the hives the combs loaded

and I believe if we exert ourselve more in the introduction of extracted honey the future will see the greater portion spring, when they are hauled to the of our honey sold in the liquid form. outyards and used there. and prepare it for market and we can produce so much more per colony that we can sell it for about half what we get for the comb honey and give us the same profit.

I think it is quite important that extracting combs and unfinished sections that are extracted, should be thoroughly cleaned if they are to be us the same profit. us the same profit.

It is estimated that it takes about

the combs replaced in the hives, one tracting supers, so that the bees may can obtain nearly twice as much not be incited to rob. can obtain nearly twice as much Extract each variety of honey by

itself, if possible, but it is not always possible, for the bees will persist in working on sumac when we would like clover honey.

I prefer to do the extracting in its

season as soon as it is fit. One must be guided by the thickness of the honey—it should be left with the bees until ripe enough to keep. I believe all beekeepers should be very particular about this in order to

The diameter should conform to the size of the herd, and if 2 inches of sliage are fed each day there will be no loss from surface exposure.

Size of the herd, and if 2 inches of sliage are fed each day there will be no loss from surface exposure.

half the price.

My honey is all left on the hives until the latter part of September. By this time the bees have thoroughly ripened it and it has become so rich and thick that it takes a good right arm to swing it out of the combs. the bees they are carried to the hone;

house and left there until evening. Before beginning to extract, I take the uncapping knife and hone it on distone until the edges are good

This will prevent tearing the combo to a great extent when shaving the cappings off. The knife is occasionally dipped in a pail of hot water which greatly expedites the work also Two frames of nearly equal weight and leak more or less; they attract re selected each time so as to balance the mice and robber bees and the slicely in the extractor. The crank is are selected each time so as to balance nicely in the extractor. The crank is turned rapidly for a minute or so and likely to be sour.

It is then drawn off at the honey gate into an agate pail which has a sleve over it to catch the bits of cappings which frequently get into the extractor.

combs are held up to the light and graded. The white honey is selected market, use some small packages. A and extracted first, next the amber glass package is preferable to all and then the dark.

the top section telescopes into the bot- | 'pure honey" on it.

The invention of the movable frame tom section. The top section has sieve bottom which catches the con.

out of the hives the combs loaded with honey, and of returning them to the lower section and nothing is lost the bees when empty without damaging them or injuring a single bee.

Extracted honey comes nearer being a staple article than does comb, and I believe if we exect ourselve work. The empty combs are set into the home spiary and cleaned up by the bees and stored away until next

I do not know of any way they co 15 pounds of honey to make one be cleaned thoroughly except by the pound of comb.

If honey is extracted from the combs without mulilating them and wait until evening to return the extractions.

> About sunset is a good time, and if any excitement prevails it dies out be-



Extracted Honey at Meadow View

fore any damage is done. The next morning all is quiet,

We have tried keeping the com over from one year to another with-out giving them back to be cleaned. and we do not like it. They are sticky

Then when the spring comes, if w happen to put them on the hive dur-ing the day of a short drop we have some risks again from the excitement caused, and some danger of robbin We have often kept extracted honey, one, two, three, and even four The honey is then poured into the gallon tin cans, for the wholesale honey the leakage and danger trade; and some in Mason jars and invasion of the moth makes it very unadvisable to hold it beyond the sea-

The uncapping can is in two parts, printed with the owner's name an

The Kansas Department of Agricul-| The first attempt at reforestation on ure wants to establish a bureau to a large scale in the Puget So inspect grain feed, seed and hay with country is now going on the purpose of raising the standard Olympic National Forest

on these commodities. Chicago and where burned over lands are being St. Louis already have such bureaus, planted with Douglas fir.

#### THE GOVERNORS ON PRESIDENCY

(Continued From Page One.) denied the several states, then ther will be enjoyed by the railroad comthe right of the several states to regulate the rates of transportation in able and logical result, result in the regulate or supervise the conduct of any business interstate in its characiness in interstate commerce is di-That there are many difficulties in

cident to the present situation, is apparent. To adjust the rates of the a people, because it concerns their great transcontinental railroad companies to the changing conditions in-cident to the changes in sentiment and administration in 48 states, is indeed a difficult problem. The who problem of railroad rate regulation in this country is in a confused, com-plex and unsatisfactory condition. No yard-stick has as yet been discavered by which either to establish rates or to measure the reasonableness of rates charged.

Some people see in the present situation such difficulties that they contend that government ownership and operation of railroads is the only hat government ownership and operthat government ownership and open ation of railroads is either a necessary or novisable solution. But it will doubtless be necessary that we should "cut and dry" many times before we sut and dry" many times before we maily determine upon the correct colley for dealing with this important and intricate problem. In view of the markedly different conditions existing in this and in other countries, the experience of other nations in realling with this question is but of imited value. We must work out our wan problem for ourselves, but we must at all times adhere to the fundamental principle that a railroad ampany is a common carrier and a subject highway; that it must be open of all upon fair and equal terms, and that the right to charge for the transportation of persons or of property is right to tax. Sich, in order to be defensible, must be reasonably and

important phase of the question of transportation, I contend, is still a question for the states, rather than for the national government. The question of taxation, or to speak inequalities, imperfections and injusof transportation free from any super-vision or regulation. And they will thus be enabled to levy a tribute upon the people of the several states, the amount of which will be limited only by their own necessities or desire for problem. The laws regulating mar-gain. Further than this, the denial of riage and divorce; the conduct of public service corporations and ordi-nary business affairs; judicial pro-of arrogating power and authority cedure; laws regulating the hours of tabor, improving the conditions under which it is performed, and protecting the health and safety of those who perform it, as well as the people ulated by the several states of this ter if thereby the conduct of that bus-ter if thereby the conduct of that bus-in interstate commerce is di-with which the state must deal if they are to be effectively dealt with at all. The field is a broad one, and the work is one which has in it the destinies of

> manity seriously impaired if the right of the states to regulate transportation within their borders shall now be denied. Governor Aldrich on Tariff Rates. Governor Chester H. Aldrich of Ne branka, author of the Nebraska rail-way rate law, addressed the conven-tion of governors today on "The Right of the States to Fix Intrastate Traffic Rates." Governor Aldrich made a

But

plea for state authority in the regula-tion of public utilities, and gave the results of the operation of the Ne-braska rate law to illustrate his argument. nision, of nation-wide importance, said he, "where our Supreme court has gone into the legislative business. has gone into the legislative business. It is now becoming quite the thing for federal courts of inferior jurisdiction to the Supreme court of the United States, to invade the province and rights of these sovereign states by subterfuge, cunning device, and rallacious reaconing and thus multify state laws and the up generally the government of the state, depriving them of their right to control their own internal commerce.

this land. Idea Is Repugnant.

"In other words, the idea that courts can legislate either directly or indirectly is repugnant to our entire and whenever a court strays outside of this particular province, it is not only

union is, in the main, just and equitable and fair and that railroad companies doing business today under these regulations are prosperous.

"As a notable instance of this, I call your attention to my own state in its regulation of the common carriers happiness and their well and the therein. I here make the assertion this field will be narrowed and the therein. I here make the assertion that under the regulation through the freight rate law, the passenger rate law, and the railway commission, the railroads of the state of Nebraska are on a better business basis and on betterms with the people of the state and do business with them more satsfactorily than they have ever before in the history of their exist-

"Under the two cent fare law, the following figures will show that the hundress of this state in passenger traftic has greatly increased.

Jan., Feb. Cash tickets Collections nd April 1908 . . . . . . . . \$1,348,127.63 1910 . . . . . 1,621,815.71 1911..... 1,650,965.02 68,246,85 "The summary for the same month

\$19,798.47

the commission of my state, only two center but four governors tied for first of them have been appealed from honors by hitting the target. The suc-They have forced a better service; cessful marksmen are Governors Veshave forced the railway companies to sey of South Dakota, Cruce of Oklahave forced the railway companies to build many new depots, to re-ballast their tracks, to make various connecnore exactly, the reform of the many scheme of government. When a their tracks, to make various connecting in the reform of the many scheme of government. When a their tracks, to make various connecting in the reform of the many scheme of government. When a their tracks, to make various connecting in the reform of the many scheme of government, when a their tracks, to make various connecting in the reform of the many scheme of government. time schedules, have made them put unjust and unreasonable, then it has on trains and have done innumerable used its power to its fullest extent, things for the general betterment of the service of the company and the

> "I know not what other states may do; I know not what other states But I can speak Lor my may think. own state and say that she demands the right and the privilege to be allowed to do the things which overeignty, her independence, and her liberty says she may do. "I say that my state will not only

insist, but it will carry forward, at any and all bazards, its inherent governmental functions and in doing this it stands in line with an unbroken chain of decisions coming down from the highest judicial body in the land, from the earliest day to the present.
"It will respect courts and could decisions. But as a condition precedent to all this, it demands that cour opinions stay within well marked lines and respect the sovereign power of these states in the regulation and control of their own purely internal

"At all times it asks these courts to do homize to the scheme of representative government and let the courts remember that tyranny clothed in the garb of judicial ermine has features as hideous as though in the hands of a czar."

Governor's Visit Proving Grounds.

Twelve-inch guns roared repeatedly yesterday afternoon at Sandy Hook as 26 givernors of states stood on the remparts of Fort Hancock as guests of the United States government and watched thousand-pound projectiles whistle 10,000 yards over the water at a fragile canvals target.

The group traveled to the Sandy Hook proving grounds by special train. All but two delegates, Governors Hoke Smith of Georgia and Austin L. Crowthers of Maryland, made the trip. After the exhibition target practice the battery commandant antiounced that two "theoretical bull's syes" had been stored and that the Governor's Visit Proving Grounds.

or had been scored and that the ser two shots were but a few feet A cruiser, he said, would have nehit four times.

logislature, but upon the courts of and orders that have been entered by planted a builet squarely within the homa, McGovern of Wisconsin and Hay of Washington. A system of employers' liability in-surance, conducted by the state for

the benefit of workingmen, was advocated by Governor Woodrow Wilson of New Jersey, at the conference. Governor Wilson said in preface that he started a "scrap yesterday and did not care to start another.' "In New Jersey," he said, "the in-lemnity companies have raised their rates, in some instances one thousand

per cent, because of our recent liability legislation. These gentlemen are singularly unwise, but that is not the worst of it; they show clearly an intention of raising the rates still higher. There must be a system of state reg-

#### J. M. KINCAID

Asheville Man Died This Morning at Mission Hospital—Interment at Morganton.

J. M. Kincaid of this city died this morning at 1:30 o'clock at the Mission hospital. Mr. Kincald was 75 years of age and until last winter been in extremely good health. He was attacked with la grippe during the winter and since then had rapidly declined. In June he became worse and the end came this morning as the result of Bright's disease and other He was a native of Morganton but

moved with his family to Asbeville about 12 years ago, shortly after the death of his wife. His home was at 79 Asheland avenue.
Surviving are two sons, J. K. Kincaid of Savannah, and W. J. Kincaid of this city, and three daughters. Miss Clara Kincaid and Mrs. C. F. Mc-Harge of Asheville, and Mrs. Jennie

The funeral services will be held this evening at 8:30 o'clock at the home of Mrs. Mcliarge, 12s South French Broad avenue, and will be conducted by Rev. R. F. Smith and Rev. L. T. Hitt. The body will be taken to Morganton in the morning and interment will be made there at noon with full Masonic honors, Mr. Kincald having been a Mason for 25 years.

Lon Angeles, Cal., Sept. 14.—O. D. F. Lynch of New York city was caught between the second floor and plutform of the elevator in a downtown hotel today and so badly crushed that he died in a few mitnutes.

Lynch tried to alight from the elevator without signaling the operator to stop.

## TRUST NOT TO BLAME

Hardwick Says the Increased Price of Man Held for Murder of Georgia Sugar Is Due to Crop Shortage.

Savannah, Ga., Sept. 14 .- The increased price of sugar is not the result that girl too much to let her live with of manipulation on the part of the another man. I know who put the American Sugar Refining company, poison in her medicine, but I didn't but is the direct result of lack of pro- do it." These are the two conflicting duction of raw sugars according to statements alleged to have been made Congressman Hardwick, chairman of by R. C. Kennedy upon the arrival of the congressional committee investi-gating the so-called su ar trust. "The back to Smithville on the charge of fact that the Federal Sugar Refining killing Mrs. Maude Childers, a bride company, the opponent of the alleged of six months. Kennedy has sugar trust, in putting up the price held in the Carrollton jail for two of its product to a figure even greater days following his arrest at a turpenthan that of the American Sugar Refining company shows that the increased cost is from a lack of produc-

ion," said Mr. Hardwick. "While my committee will investi-gate the added cost of sugar when we meet again in October, I have no idea that we will find it comes from the efforts of the trust to make the people pay more for sugar than it is worth. The Cuban crop is short, the Euro-

#### vance." GIRL SHOT TO DEATH

Della Halsey Dragged from Bakery and Killed by Unidentified Man.

Kenton, O., Sept. 14 .- Della Halsey uged 22, a prominent farmer's daugh ter, was dragged from the baker; where she was employed today and murdered by an unidentified man. She was shot through the heart three

The motive for the shooting is un

#### Crushed by Elevator.

Lexington, Ky. Sept. 14,-The fa

#### STATEMENTS CONFLICT

Bride Says He Knows Who Gave Her Poison.

Carrollton, Ga., Sept. 14 .- "I loved tine distillery in Heard county. He was taken to Leesburg, where

he will be confined in the county jail. He protested strongly against being taken to Leesburg.

Dr. Anna Shaw Speaks to Governors.

Spring Lake, N. J., Sept. 14.—Dr. Anna Shaw, president of the National pean beel sugar crop is short and so Woman's Suffrage association took is the American beet sugar crop. It is natural that there should be an advance."

Woman's Suffrage association took for 'battle for the ballot' to the floor of the governors' conference today. Twenty-eight governors, among them several auffrage chample west, heard the suffrage leaders' ud-

Strike Conference Ends

Chicago, Sept. 14.- The confes looking to a settlement of labor transles on the Illinois Central rails way chief temporarily today.

President McCreery stated that he is convinced the new vote of the unions will overwhelmingly favor a settle.

Ives, of Arizona, Out for Se

Tunon, Aria, Sept. 14 .live favors reinserting the