The Only Weekly Agricultural, Horticultural and Live Stock Journal in the State.

VOL. CXXXIV. No. 16. Whole Number 3499.

DETROIT MICH., SATURDAY, APRIL 16, 1910.

75 CENTS A YEAR \$1.50 THREE YEARS

FARM NOTES.

The Spring Work.

unusually early and favorable spring, following a fall in which the weather permitted more fall plowing than usual in Michigan, has greatly facilitated the spring work. More oats were sown in March than for many years, and at this date practically all the crop is in, while a year ago comparatively few oats were sown at this date. This propitious start in the spring campaign has made possible early spring plowing for corn, potatoes, beans, and other cash crops grown in Michigan, so that there is a prospect that people who were planting corn on the first of June last year, because of the unfavorable weather, may be nearly or quite as far advanced during the early days of May this year. Unusually early spring plowing of sod ground is a factor in the making of good crops of corn, potatoes, etc., and, providing the best use is made of the time available for getting the fields plowed and properly fitted for these crops, this should be an exceptionally good season for Michigan farmers. But in the anxiety to get the plowing done early. the proper tilling of the land to conserve good deal of this kind of work can be done in day, consequently it will be more profitable to harrow the fields plowed, at least after each heavy rain, than to neglect them until time to plant the crop before the fitting process begins. Quite often an early drought occurs which makes the proper conservation of the moisture which may fall an important factor in the production of good crops, especially upon the lighter and drier soils. The heavier soils, for best results, should Thus, if the harrowing is done at

is an important factor in getting the crop in on time on this kind of land. Where this plan is not followed, the proper fitting of the soil for the drop is often neglected because of the desire to get the crop in on time when planting time arrives, so that for two reasons it is a better genpractice to harrow the land when in the best condition after plowing. than to neglect the work of fitting until planting

time.

The proper time to plant corn and other spring crops is largely a matter of opinion which must be governed more or less by local condi-These conditions have made it impossible to plant in reasonable season for the last two years, but the prospects now are that the corn crop may be gotten in on time this year. There is often, however, just as much danger of planting too early when conditions appear to be exceptionally favorable, as of planting too late when conditions

A FEW LEADING ARTICLES OF THE WEEK.

Getting Started with Bees .- Begin with a few colonies and increase as knowl-heredity and line breeding, important alike in herd improvement 429 Breed Good Horses,-An argument for the production of good horses which are always in demand and now bring record prices "Pouring" a Concrete Railroad Bridge.—Cement has wrought a great change in bridge building methods; how the longest concrete bridge in this country was constructed Allan Woodrough's Experiment.—Story of a man who won by demonstrating that "It's never too late to learn" Tunics and Low Necks Features of the Summer Dresses.-Hints for the woan who wishes to be up-to-date..... Summer Forage for the Dairy Herd .- Plan to insure against short pasture by supplemental crops444 Large vs. Small Spraying Rigs.—Often smaller rigs are preferable......446

of flint corn was planted in during the arill. first days of June, about a month after the soil moisture, make the plant food was of this variety, yet all ripened at available and secure a proper seed bed practically the same time and the field for the crop which is to be planted later made a very good crop. However, when should not be neglected. With modern conditions favor early planting, it is bettoo early than to wait too late, since the applied as above suggested. early planted corn, one year with another, will make a better crop than that planted so late that its maturity must depend upon a very late and favorable fall.

Fertilizer for Beans.

Will you please let me know through your paper what kind of fertilizer to use on clay loam? I want to plant beans on it this spring. It is somewhat run out. Huron Co.

Beans being a leguminous crop, do not be worked only when their moisture con- require a fertilizer containing nitrogen. tent is such as to promote a good tilth At least, it will not pay to use a very in the soil and avoid the damage which high percentage, if any, nitrogen in a may be done them by working them too fertilizer for beans. On clay soils in a good state of fertility, there seems also such time as the soil is in ideal condition to be less need of using potash than on available for the crop that would be the following each heavy rain, considerable lighter lands. Some who have experi- case if a field were plowed late. Another time can often be saved just at the sea- mented in the use of fertilizers for beans advantage is in the better conservation son when the crop is to be planted, which upon fertile clay soils, find profitable re- of the soil moisture by early plowing. It

do not favor early planting. One season, sults only in the use of phosphoric acid the writer remembers planting corn dur- and prefer to use 200 to 300 lbs. of acid ing the first week in May when condi- phosphate per acre, sowing it in the row tions seemed to be favorable for its early with the seed and through two drill hoes growth. Cold, wet weather followed and on either side of the row in which the a poor stand resulted. An early variety seed is dropped, where sown with a grain Where a clay soil is in a poor state of fertility, however, it might be profitable the crop was planted, and the stand to use a complete fertilizer, since the lat-was so poor that nearly half the corn ter would be better fitted to get the crop ter would be better fitted to get the crop started and would furnish available potash as well as phosphoric acid for the development of the crop. Two hundred conditions favor early planting, it is bet- lbs, of a complete fertilizer should be a ter to take the chance of getting it in fairly liberal dressing for beans where

Early vs. Late Plowing for Beans.

I have rented 20 acres of sandy loam for beans. A light cut of hay was taken off last year and now there is a clover and timothy sod, not very stiff. Would you advise plowing at once and keep the ground well tilled until time to sow or let the grass grow until the middle of May then plow it down?

Gratiot Co.

B. B. C.

Early plowing is undoubtedly preferable for any spring crop where a heavy sod is to be prepared for the crop. If plowed down early, a much better seed bed can be prepared and the sod will become partly decomposed so that the plant food which is stored up in it will be more

sometimes occurs that there is a spring drought so that late-plowed ground will not contain enough moisture at planting time to insure the quick germination of the seed. Where the ground is plowed early and harrowed after each rain there is no chance of such a condition. The thorough preparation of the ground will also liberate considerable stored up plant food and a better crop is thus assured for the several reasons noted than would be the case if the plowing were done later in a normal season. Of course, if weather conditions are just right, this might not be the case, but no one can tell in advance what the weather conditions will be so that it is always better to prepare for the worst in the preparation of the soil for any crop. A little more vegetable matter would be plowed down if the grass were allowed to grow until there was just time to plow and fit the land, but the advantage to be derived would not compensate for the risks above men-

Alfalfa and Inoculation.

Afafa and Inoculation.

I would like to ask through The Farmer about inoculating alfalfa seed. I have been told that I could get a preparation from Lansing that would do the work, so the seed would grow on ground that had never grown it before. I intend sowing rape with it for a nurse crop. About what time should it be sown? How is land plaster to put on corn or potatoes? Should it be put on the hill or sown broadcast? broadcast? Barry Co.

Experience seems to demonstrate that it is not always necessary to inoculate alfalfa for good results; that the bacteria peculiar to the plant is present in some soils and "gets busy" at once after the alfalfa is sown. But under other conditions the bacteria does not seem to be present and, even when supplied by artificial means, the bacteria do not display the industry above noted. Just why this is true we are not certain, but probably because the soil is not in a condition to become a suitable medium for their habitation and development. After several trials, the writer has become convinced that inoculation cannot be depended upon to produce results if the soil is not in a receptive condition. Our best authorities on alfalfa culture, who have had the widest experience in growing it and the

greatest opportunities for observing its success or failure under varying conditions, contend that failure is more often due to the absence of sufficient lime in the soil. Undoubtedly alfalfa partial to limestone soils, or soils containing a relatively high proportion of carbonate of lime, and plenty of instances are noted by the authorities mentioned in which the application of lime has resulted in the securing of good stands and profitable crops of alfalfa, where all other means, including inoculation, have failed to bring results. Whether this result was due to the fact that the lime sweetens the soil and gives it an alkaline reaction favorable to the propagation of the bacteria or whether there was a lack of available lime in the soil to supply the needs of the alfalfa plant for this plant food is not certain, but as liberal applications of carbonate of lime, or ground limestone containing minimum of minerals



The Early Season is Crowding Spraying Operations. Scene in Edward Hutchins' Allegan Co. Apple Orchard.

other than calcium, seems to produce this tinue dry, I am rolling all of the ground desired result in many instances it is after seeding. probably due to both cf the above causes in some degree.

sowed eight acres of alfalfa on well-pregood stand. an area being left as a check plot. The I ever raised. results on this eight acres were practically the same as on the area first sown; we had two severe frosts on the nights the inoculation being imperfect and scat- of April 6 and 7. On the night of the 6th

writer that something besides proper was growing luxuriantly and preparation of the soil, good fertilization green as grass, could be smelled like and inoculation is needed on his soil for new-mown hay the next day. There is the successful growing of alfalfa, and no question but what the frost injured this year he will apply lime as well. The the clover severely. I have an idea that eight acres first mentioned will again be with the right kind of weather following sown, but lime of different kinds and in and a good rain, that the effects of this varying amounts will be used. Ground, frost will be largely overcome, but I high-calcium limestone will be used in know one year when we had frosts early amounts of from a ton to four tons per in May after clover had made some such acre on different parts of the field, and start as it has this year, we had a very ground, burned lime and hydrated lime light crop of clover, due, I am positive, will be tried in comparison with it on a to the injury caused by the frost. small scale, so that next season we hope to know more about the efficiency of lime as a soil corrective for alfalfa and clover, as well as other crops on which it will be tried on a small scale.

As noted in this inquiry the Bacteriological Department of the Agricultural College has been furnishing pure cultures for experimental or practical use at the cost of preparing them. Where a successful alfalfa field is not within reach it is probably a wise precaution to use the pure culture on the seed, but inoculation with soil from a successful field is generally thought to be preferable where this is practicable. The above has been written, not with a view of discouraging inoculation, for we believe it to be essential in many cases and a wise precaution in any case, but simply to warn the grower against expecting too much from it, and against attributing a possible failure of the crop to its inefficiency. The successful growing of alfalfa is a problem which should interest every Michigan farmer, and all should experiment with it, on a small scale at least, until the problem is successfully solved under the local conditions with which the individ-

lime would generally be more beneficial than the sulphate of calcium, or land plaster.

LILLIE FARMSTEAD NOTES.

LILLIE FARMSTEAD NOTES.

As further evidence of the remarkable spring I wish to offer the fact that we have finished, on April 8, seeding 30 acres of oats and 35 acres of oats and peas.

We did not start as early as we could have done because we were not prepared for such weather, and further, because I was afraid to start so early. We have had our regular dairymen's chores to do, had our regular dairymen's chores to do, short days, and yet with all that we have succeeded in putting in this acreage without any hurrying, and putting it in in good shape. The stones were all picked up ahead of the pulverizers so that they would do good work and the fitting of the ground was not slighted in the least. think this is remarkable and probably would not happen again in a life time. There has been no rain to stop working the soil, nothing whatever to hinder, simply fine, bright weather and the ground is dry and to all appearances will con-

Sugar Beets

We have begun to work the beet Three years ago this spring the writer ground, preparing it for beets. ground was fall plowed and there has pared and well fertilized soil, seeding it been no heavy rains since the plowing in June without any nurse crop. A fine and the ground is remarkably loose and stand was secured, most of which with- will need an unusual amount of rolling stood the first winter, but inoculation and packing to get a perfect seed bed. occurred only in places, with the result We, of course, can get this ground in that the stand never amounted to much excellent condition in a few days by putexcept in the few places where nodules ting all the force on the ground, but I developed on the roots, where the plants do not intend to sow them until the latwere strong and vigorous. This occurred ter part of this month, or perhaps the in small isolated patches and individual first of May, but we will work the ground plants scattered throughout the field, over occasionally and try and destroy all which was plowed and planted to pota- of the weeds we possibly can. I intend toes last year, after there seemed no to put about 1,500 or 2,000 pounds per further hope of the alfalfa making a acre of lime on the beet fields this year, Last year another eight There was apparently such good results acres was prepared and sowed in a sim- last year where I put the lime that I ilar manner, except that the seed was would seem warranted in doing this. This inoculated with a pure culture, and to field is in excellent tilth. I shall use make inoculation doubly sure soil from about 500 pounds of good fertilizer to the the vigorous spots in the former seeding acre and with a good season from now was sown on this field and harrowed in, on, I shall expect the best crop of beets

As I have been expecting all along, water froze ice one-half to three-quarters These experiences have convinced the of an inch thick. The clover field, which cannot see that wheat is injured by this frost and some fields of oats that were up are not seriously damaged. I am positive that very much of the new seeding clover, that which was seeded early and had sprouted and come up, will be entirely ruined. As I stated a short time ago, the probability is that a goodly number of these seeds will be uninjured by the frost if they have not yet germinated and come up. In that case, of course there may be a sufficient amount of them left to get a good catch of clover, even with these earlier plants destroyed by the COLON C. LILLIE.

IMPROVED TYPE OF PEA BEAN.

The improved pea or navy bean introduced a year ago by the Alfred J. Brown Seed Co., of Grand Rapids, Mich., has made good. Farmers who make bean growing a profitable crop should secure their seed direct from the introducers unless they can be sure that the seed offered by others is the true type.

NATIONAL CROP REPORT.

problem is successfully solved under the local conditions with which the individual has to contend. Then it should be made a permanent factor in the production of the farm, since no other crop can arrival it in the feeding value of the forage produced.

Land plaster will prove of little value on the older soils, although it has a stimulating effect upon soils which have been recently brought under cultivation, presumably through the release of potash from unavailable compounds. On older soils the carbonate of calcium in the form of ground limestone, or hydrated lime would generally be more beneficial

MICHIGAN CROP REPORT.

Wheat.—The condition of wheat on April 1 in the southern counties was 82, in the central counties and upper peninsula 93, in the northern counties 97 and in the state 88.

sections of the state report no snow in open, level fields.

The number of days protection to wheat by snow in the southern counties was 2, in the central counties 4, in the northern counties 13, in the upper peninsula 16 and in the state 5. In answer to the question, "Has wheat during March suffered injury from any cause?" 210 correspondents in the southern counties answer "Yes" and 128 "No." in the central counties 42 answer "Yes" and 89 "No," in the northern counties 13 answer "Yes" and 108 "No" and in the upper peninsula 1 answers "Yes" and 19 "No." A covering of ice, especially on low land in the southern counties, during the latter days of February and the first decade of March, caused some damage to wheat and the want of (Continued on page 432).

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A SIX-YEAR ROTATION.

Would you consider the following as being a satisfactory rotation on a medium light soil which has not had the best of care? Am able to cover one field with manure each year for corn. Would it be better to spread manure lighter and cover two fields for corn and one for potatoes and use a little fertilizer on both crops, or put manure all on corn ground and all the commercial fertilizer on potatoground? Here is the rotation I had in mind: Clover hay, first year; corn, second year; wheat, third year; clover hay, fourth year; potatoes, fifth year; cots, sixth year. The fields are of uniform size and while it seems like a long rotation (six years) I thought it might be O. K. as it has two clover crops in it. In such a rotation would you plow potato ground for oats? When potatoes freeze in the ground, as they did last fall, (and then all thaw out fine and are dug and stored carefully until spring), will they make good seed or will the freezing hurt their germinating quality?

Hillsdale Co.

L. W. M.

I think this a good rotation of crops

I think this a good rotation of crops for a six-year one. Two crops of clover and two hoed crops ought to keep the land in good tilth and in good physical condition.

I would prefer to have a medium covering of stable manure and have it applied on both fields, rather than to have a heavy one on only one. If very heavy there will be a loss that cannot be helped. It will be economy to use fertilizer with the manure. But I would put the manure on the field intended for potatoes early, the fall before or during the winter rather than wait until spring. Fresh manure is supposed to cause, or at least encourage, the growth of scab spores in the potatoes

I do not think it necessary or advisable to plow potato ground for oats. You can prepare a perfect seed bed with the disk and cultivator.

If the potatoes were chilled, I would not want to risk them for seed. Better test them anyway. Plant some of them in a box in the house where it is warm and see if they will grow.

COLON C. LILLIE.

THE COST OF THE OAT CROP.

I noticed, in the Michigan Farmer of April 2, Mr. S. B. Hartman's figures on growing oats. I am sorry that Mr. Hartman does not live nearer my place. would give him a job fitting my 10 acres for oats, and also to drill them in at his I can not see or understand how Mr. Hartman or anyone else can go over a 10-acre field with a cutaway harrow three times for \$7.50, one time with a spring-tooth drag for \$2.50, one time with spike-tooth drag for \$1.25, dril! them in for \$2.50, or keep the labor for threshing down to \$3. Also the labor expense for drawing manure at 25 cents a load would seem to be very low unless the town is very close, and then I think it is too low.

I think if Mr. Hartman will charge fair pay and pay his team, tools and hired help fair wages, that all of the above figures are away to low. Mr. Hartman also forgot to mention the rent on the land, or taxes and interest on its value.

Oats are a good crop. Everybody should grow and improve them, but I can not make such big profits as Mr. Hartman attempts to show. I would like to read what others have to say touching expense and profit from the oat crop.

Bay Co.

A. Goyk.

GOVERNMENT WHITEWASH.

Several readers have recently inquired for the formula for making "Government Whitewash," so-called. The ingredients used and the portions in which to use them are as follows: To 50 lbs. of lime made into a paste, add one peck of salt previously dissolved in warm water, 3 lbs. of ground lime boiled to a thin paste, stirred in while hot, also one-half lb. of powdered Spanish whiting, and one lb. ni hov should be mixed well together and allowed to stand several days before using at which time it should be heated and applied as hot as possible, either with a brush or spray pump.

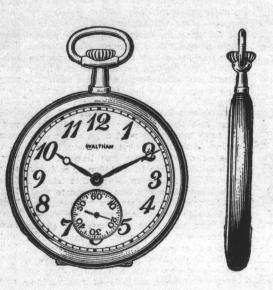
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Inclosed you will find 75 cents for another year's subscription to The Farmer, for if I had to give up the Michigan Farmer I would have to give up farming, as it is the best paper I ever read and it is a paper for the whole family.—Chas. R. Elburn, Shelby, Mich.

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take a little longer to gather the eggs,

on the side of too many nests.

while in "public" nests it is always a matter of doubt up to hatching day, eshens wanting to sit on the same nest. Of course if you have a purely laying strain or variety your trouble is greatly lessened.

peculiar one. The mere statement that to be done over again. corn is not a good food for hens is, to say the least, misleading. On a farm won't suffer. But if you are essentially hens to eat them; if so, scald them—I and cover, and the job is done.

don't mean the hens.

To save all the unhatched brood in the

enough importance to giving their hens an abundance of pure water. Twenty hens will use over one quart of water per day. See that yours get it.

To the old saying that if you can make "two blades of grass grow where one grew before," etc., I would add that if you can produce two eggs where you produced one before, at present prices, the eggs pay better than hay. Watch your hens individually and collectively; find out their needs and then supply them. Be eternally on the watch for "live wires," and when you find them put them to WM. J. COOPER.

GETTING STARTED WITH BEES.

The cheapest way to start an apiary is to buy a few stands of bees in old box hives, or in trunks of trees called gums, and transfer them to modern patent hives. If, however, one is timid, it may be wisest to buy the bees already in patent hives, and gain experience before attempting to transfer. It will be best for the beginner to start with a few swarms and work up, rather than to buy many swarms at the start, as experience is quite necessary for

Any one who will can learn to handle bees. I do not believe that bees have a natural antipathy for one man and a lik ing for another. The very fear of the first brings upon him the wrath of the bees. Confidence in one's self, and cool, deliberate movements, are necessary to success. Confidence will come with knowledge of the habits of bees and with work among them. While bees are quick in their movements, they do not like quick, eggs per hen during the six months. jerky, or nervous motions. Cover your this gait was maintained thruout the closface with a good bee veil, your hands ing six months this correspondent should with canvas gloves that bees cannot sting feel very proud of his flock. However, through readily, and, armed with a bee we naturally expect laying hens to do smoker, you can work with but little their best work in the early part of the danger of being stung. After a little you year.—Ed.) can lay aside your gloves, and a little later the veil.

BEEKEPING its pleasure and profits, is the somely-fillustrated magazine, GLEANINGS IN HER ULLTUIRE. We send it for six months on trial for twenty-five cents, and also send free a dynage hoot on beet and our bee supply catalog to all who name this paper. THE A. I. ROOTCO., Box 54, Medina, O.

remove the hive cover, lift the edge of the hive blanket, blow in a little smoke, and replace the blanket. In two minutes more you can tear the hive to pieces with impunity, for every bee will be gorging himself with honey and bent on self-preservation. Pay no attention to those flying about, and above all do not strike or cuff Now that the season of greatest egg at them. Be careful not to crush any, production is on, see that the hens are for the smell of crushed bees seems to provided with all kinds of nests. Unless anger others. Bees that are angry give you have a very large poultry house don't a peculiar, higher keyed hum than that confine the nests entirely to it. I find it from the rest of the hive. A little smoke a good rule, when warm weather comes, will subdue them. Bees are generally to turn the hens right out of the poultry crosser on cloudy, stormy days than on with a back door entrance, as anyone night than in the middle of the day. Old who has made any study of hen nature bees are crosser than young ones, and knows that the hen retains enough of her as the old bees are the field workers this may account for these facts. The be-So I say, make lots of nests. It may ginner should take advantage of them.

Transferring or Drumming Out Bees. Get a good clean box, a dry-goods box eggs, and less trouble with your sitters. will do, that will fit the old box hive or I have heard and read a lot about egg- gum that you wish to transfer from. Go eating hens, but I never yet caught one to the old hive and, after giving them a pecking a whole egg, nor have a ever few whiffs of smoke, close the entrance seen an egg eaten in a hidden or secluded to the gum and tip it bottom side up nest. Don't deduce from this that I Remove the bottom board and place your would provide every hen a separate nest, box on so that it fits fairly well. Now but let me tell you that you will never err begin tapping or drumming on the side of the gum. Keep this up until the bees If you use hens for hatching chicks have all clustered in the box above. This success will be assured in most cases will take from a few minutes to a half where the hens are given isolated nests, hour or more. If the bees do not cluster readily, they may be hastened by carefully removing the box with the cluster pecially if your flock is of the walking and giving the gum a few vigorous incubator variety, with about a dozen shakes. Replace the box and proceed with the drumming. nearly always be left in the old hive. But you must be sure you have the queen or the bees will return to the gum after.

The question of food for layers is a hiving and your whole work will have

Now carry the clustered swarm to the new hive which you have already pre run which furnishes grass, worms, peb- pared, with full sheets of foundation in bles, etc., if corn is your most convenient the frame, and placed on the stand. Refood, why, feed it, and your egg return move three or four of the frames and jar the swarm, by a vigorous shake or jerk, a poultryman with a small area or run, into the hive, or better still strike the you must balance the ration yourself. I box with the bees a smart blow on the consider oats a very valuable feed for top of the hive to jar the bees in. Relayers. It is sometimes difficult to get place the frames, put on the hive blanket

A good many people do not attach gum, nail on the bottom board, tip right side up, and replace on the old stand. There will be enough old bees returning from the field, and enough young just hatching, with those that were left behind, to keep the brood warm, and to feed the young larvae. In three weeks all the larvae will have been hatched, and these may be drummed out as before and united with the parent swarm or hived as another swarm, as you wish. Generally it will be best to unite with the old swarm to strengthen it. This is always best when honey is desired. But where increase of swarms is desired, hive them by themselves. In uniting with the old swarm be sure they have no young queen with them. A good way is to place a small platform in front of the parent swarm and cover with a sheet. Then place a queen or drone excluder at the entrance of the old hive and jar the young swarm onto this platform. With a little smoke they can be driven in with the old swarm. The queen, not being able to get through, can be caught and killed. The old hive or gum can now be split open and the honey and comb removed, the honey extracted or strained and the comb melted into wax

Ogemaw Co. H. B. FULLER.

GOOD SIX-MONTHS' WORK.

Having kept an egg record during the first half of last year I am reporting results. My flock is composed of full-blood Rocks. During the period Jan. 1-July 1, 1909, the number of hens averaged 33, and the total of eggs laid was 2,489.

Ogemaw Co. F. L. 15 for \$1.00, 26 for \$1.50, 50 for \$2.50, 100 for \$4.50 (This is an average of a trifle over 75 Ogemaw Co.

My Treatment for Rheumatism is to The secret in handling bees is to get give a tablespoonful of baking soda in them to gorge, themselves with honey, 3 qts. of drinking water every two or for bees so filled will seldom sting, unless three days. I have also found this a good pinched, when they sting for self protec- treatment for chicks. I have 100 Wyantion. When frightened bees always gorge dotte hens and have not lost one since themselves, and smoke easily scares last August. They laid all winter. In them. Blow a few whiffs into the en- January I sold 55 doz. eggs and in Febtrance of the hive; wait a few minutes ruary 75 dozen.-Montcalm County Sub-

Farmers should eat more oatmeal.

Although the farmer of today is able to buy almost anything he wants to wear or to eat he isn't paying enough attention to food values when it comes to his own table.

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BREEDING PURE-BRED SWINE

Heredity and Breeding.

type and general characteristics have become thoroughly fixed, the chief concern of the new breeder is to, if possible, prevent an arrest in the work of improvement and development. All of the improved families of a breed have been lems breeders have to face is how to of their improved families. How to secure maintain the type and characteristics of the family is the question that confronts every successful breeder.

necessary to seek fresh blood in unrelated families that possess the same type as his own. From the union of this unthe great and unusual vigor so characteristic of the great and famous families of to beget uniform litters. a breed. There is no golden rule to follow in bringing fresh and unrelated blood vidual that lacks in blood lines may be an into the herd. The breeder having rea!- excellent breeder and make a name for ized, if possible, in what points his animals are beginning to show a deficiency, must act accordingly, always bearing in mind that new blood is dangerous to introduce into his herd until after it has become neutralized by two or more generations of line breeding, to prevent the introduction of an inharmonious force of famous sires that the country has ever affinities, which are liable to fly off and produced have not been appreciated until recognize new and dangerous affinities and after their days of usefulness have passed. spoil the results of years of systematic It requires years to demonstrate a sire's breeding to keep in control the type or model of the animals he desires to per- his progeny can transmit his qualities petuate in his herd. In the case of N. requires a still longer time. H. Gentry's famous Berkshire family of ply the blood of old Longfellow over and today than when in their prime. infusion of fresh blood through the occasional purchase of brood sows, but the blood of these sows has never taken a breeding.

It will be seen that I am a firm believer pose to explain what is meant by the term. It is simply mating animals of the object in view. It is not always necessary the same line of breeding. This, I believe to be the safest and the surest way to obtain results and maintain a uniformity of type in the herd. Line breeding the closest that we can approach to in-and-in breeding, without being in danger of impairing the size, vigor and fecundity of our swine. Some of the best animals in the show rings are closely inbred, but the great trouble with close in-breeding is the fact that defects and undesirable qualities appearing in the sire or dam, or in their remote ancestors, will be more marked, thus the breeder must discard a larger proportion of the offspring from the herd, than is the case where line breeding is practiced. There is seldom, if ever, an animal that does not possess some undesirable points that its owner recognizes. There is no surer way to perpetuate such points than by close in-and-in breeding. He must breed for type, for it is the only way to maintain a high standard of individuality, uniformity and general characteristics in his herd.

It requires less skill and success to blend blood by line breeding than it does to outcross and concentrate it by uniting different families. It requires years of systematic and careful breeding to sift out the desirable qualities of the different families of a breed and organize them into a single family that has a fixed type and prepotency. The breeders who attempt to multiply variations in their herd cannot succeed like successful breeders who practice line breeding to keep in control a certain type and establish prepontency, all the time maintaining size, vitality and fecundity in their herds.

I have very little patience with the new breeder who knows it all and attempts to improve his herd and establish a new

type by making two or three violent out-crosses. Right at the very outset he invites and fosters the very elements that will destroy the result of years and perhaps a lifetime of systematic breeding. By mixing the blood of animals of different families of the breed he invites a conflict between contending forces, the After selecting the foundation stock from type is lost, the principle of selection some well established herd where the loses the battle and heredity leads the animal back to the scrub. This is the result of bringing together indiscriminately the blood of different families of the breed. The result is more apparent by crossing two or more of the different breeds. Pigs from a Berkshire sow and formed by more or less close in-and-in from a half Chester White and half Pol-breeding. This close in-breeding sooner and China sire were red, spotted and and China sire were red, spotted and or later leads to loss of size, vigor and speckled, showing that the standard type fecundity. Hence one of the chief prob- of all three breeds employed in the experiment were destroyed, the improvemaintain the size, vitality and fecundity ments in color and form lost and the result was the return of the individual by an invigoration of fresh blood and still the principle of heredity to the original scrub. The best buyers of pure-bred swine who are paying large prices for animals that please their fancy are close Types must be preserved and unusually students of pedigree and will not buy an excellent types must be fixed by incestous animal unless it comes from a line of breeding, but the time comes when it is practical and systematic breeding for years and can be relied upon to breed uniform litters, when mated with the sows in their herds. They understand related blood with his own herd comes that a good individual without established breeding lines cannot be depended upon

In a few rare cases an excellent indihimself and his owner, but only after a systematic course of line breeding, or close in-and-in breeding can his owner reap the reward of his success. The prepotency in his blood lines cannot be established until his descendants possess a large percentage of his blood. The most powers of prepotency, and to show that

In Berkshire pedigrees Longfellow 16885 Longfellows-the world-beaters-just sim- and Lord Premier 50001 are more popular over again, to which has been added an have set a fixed type that can be depended upon to reproduce itself. Among the Poland Chinas we find the same result from the old Tom Corwins, the Perfecprominent place in the blood lines of the tions, Tecumsehs and Mischiefmakers, all herd until after it had been neutralized more or less famous for having perpetuby two or more generations of line ated their family characteristics with success

Line breeding coupled with the same in line breeding and it will be my pur- qualities of type in both sires and dams and good pedigrees accompanied by good individuals are the most essential things same breeding, but having different im- for successful swine breeding. The value mediate ancestors, bred with the same of understanding a good pedigree and breeding his herd along family lines so .s that they be bred in the same herd, but to fix and keep in control a fixed type and they should possess the same character- characteristics is one of the most essen-istics, similarity of type and come from tial phases of the successful and intellicharacteristics is one of the most essengent management of a herd of registered swine, and the new breeder should familiarize himself with it, for it is worthy of his time, attention and study, for much if not all of his success as a breeder will depend upon his knowledge of how to select and mate his animals to produce the best results.

New York. W. MILTON KELLY.

CHARCOAL FOR PIGS.

Do you think it necessary to put cinders in the pig pen for the pigs, or to give charcoal in their food occasionally?

Washtenaw Co. C. A. P.

It is an excellent practice to feed young growing pigs charcoal occasionally. Charcoal is a very good substance to keep the stomach of the pig in good condition and prevents indigestion. Charcoal is recommended to prevent indigestion, or rather to cure indigestion in people, and it is an excellent thing for the pigs to give them once a week a small amount of charcoal. from hard coal or soft are of very little use, but hard wood ashes containing coals, or charcoal, is an excellent thing, or you can purchase the charcoal pure in the market. Many people burn corn cobs into charcoal and feed the pigs. Or you can burn basswood, or any light wood and make charcoal of it yourself, but it is cheaper and much more convenient to buy this already burned, in the market. It costs very little.

COLON C. LILLIE.

Chicago packers have made large reductions in their working forces, as the meager supplies of hogs have prevented carrying on their usual operations. One of the independent packing firms has altogether ceased buying hogs, stating that at ruling prices there was an average loss of \$1.50 per head in cutting them into fresh and cured meats.



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Ticks are not only distressing to the animal but injure the fleece, and can be speedily destroyed with one part of

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HORSES

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FEEDERS' PROBLEMS.

Raising Young Pigs on Cows' Milk.

Raising Young Pigs on Cows' Milk.

I would like some advice through the columns of The Farmer on how to raise young pigs by hand. I have tried many times in the past and I have never been able to save them by feeding them with good sweet milk as I would a lamb. I have had the finest kind of luck with young lambs but not with pigs, having lost several in the past through my ignorance of what or when to feed them. I have always fed good sweet milk but they would get diarrhoea, linger for a few days and then die. Some have told me that they needed milk that was just turning sour, but that did not seem right to me. But I would like to learn how to handle them, especially this year when hogs are so high, as I often have sows farrow more pigs than they can nurse and have them die for lack of nourishment.

Livingston Co. SUBSCRIBER.

While it is best to avoid the exigencies which make it necessary or desirable to raise pigs by artificial means whenever possible, yet there are cases in which it will be necessary to so raise them or let them die. The latter course is one which the good herdsman would never think of adopting from choice, hence a discussion of this problem cannot but be of interest to many.

Only once in his experience has the writer found it necessary to resort to the artificial rearing of pigs. In that case a fine sow became seriously ill after farrowing, and before we were impressed with the danger to the young pigs all but two of the litter had succumbed to the effect of the sow's fevered milk. These were promptly removed and the writer's wife took them in charge. They were fed fresh, sweet cow's milk, early, late and often, at first from a nursing bottle which was used for young lambs, but soon from a dish, as they quickly learned to drink. They were healthy and vigorous almost from the start and made a rapid growth. In fact, they developed into about the finest hogs we ever raised, A prominent Chicago live stock com-since being "cossets" they were kept in mission firm advises cattle feeders as a pen by themselves and always had the follows: best of feed. From our experience, and from later investigation of the subject. I heavy cattle with lighter weights. Those am of the opinion that our success was largely due to the punctuality with which wish to feed for the July and August they were fed at the start and to the bottle and later the dish from which they were fed perfectly sweet and clean, since the quality of milk fed could hardly have been better adapted to their needs than the average farm product. The two factors mentioned, however, are of great importance. By nature, little pigs are fed often and at first they should be fed as often as once in two or three hours where raised artificially, if digestive disorders are to be avoided. The pigs mentioned were fed at frequent intervals, day and night, for several days, when the time between meals was gradually lengthened until we thought they could safely go from bedtime until morning without a meal. After that they were fed several times during the day until at about the usual age for weaning. Not less important is the other point mentioned, to have the milk sweet and the dishes in which it is fed clean and sweet as well. Sour milk or sour feeding vessels are the result of bacteria which develop in them. Diarrhoea may be caused from the presence of unwholesome bacteria, for which reason sour milk should not be fed to very young animals, and sour feeding receptacles should not be tolerated. It may also be caused by too infrequent feeding, which causes a gorging of the digestive tract when the young things are fed, unless they are stinted, and consequent digestive troubles.

But the substitution of cow's milk for the dam's milk for young pigs is in itself an unnatural thing and likely to lead to digestive troubles, hence definite knowledge regarding the relative composition of the two products will be helpful. Fortunately such knowledge is available. At the Wisconsin Station Professors Henry and Wool conducted some interesting exto determine the average amount of milk produced by sows and Its average composition. The analyses which they secured are rather surprising in that they show that sow's milk is considerably richer, both in fat and in solids not fat, than cow's milk. The fat content averaged from four to 16 per cent, with an average for all samples of 6.04 per cent, while the average content of solids other than fat was 11.41 per cent. The data from these analyses indicates that sow's milk is richer in all components than cow's milk, this being especially trus as regards fat and sugar. From this data it would appear that where cow's milk is to be fed to very young pigs as a sub-

stitute for the dam's milk it should be reinforced by the addition of some cream and a very little sugar for best results. When fed sufficiently often the pigs' appetite can probably be taken as a safe guide as to the amount which should be fed, although care should be taken not to overfeed, and especially not to leave any feed before them.

But, as above noted, the cases in which it is necessary to rear young pigs artificially should be made as rare as possible. This can be done only by the judicious and liberal feeding of the sow. The proper feeding of the sow during the period of pregnancy is important, as has before been emphasized in these columns; But the proper and judicious feeding of the dam after farrowing is, if possible, even more important. For the first few days after farrowing the feed should be light, consisting preferably of a rather thin slop made from shorts, ground oats, and similar grains, but no corn. As the pigs begin to make greater demands on the sow the feed should be correspondingly increased, care being taken that its nutrients are properly balanced for milk production. The experiments above referred to proved that sows give as much milk, weight considered, as the average Like the average cow their milk producing powers will be greatly augmented by liberal and judicious feeding. Since the early gains of the pigs are the cheapest gains, and since later gains are not a little dependent upon their early thrift, it is most important that they be well fed through the sow, and this can be accomplished only by the liberal feeding of a ration containing sufficient protein to stimulate a maximum milk flow, fed in such a palatable form as will maintain the appetite of the sow at its maximum and of a physical character best suited to maintain her continued health.

"Conditions are such that feeders will be warranted in replacing these who contemplate following this plan and markets, it would be well for them fact that care was taken to have not only put in good quality, thrifty 900 to 950-lb. the milk which they were fed, but the cattle. But those who intend to feed catbottle and later the dish from which they the for the September, October and Notle for the September, October and November markets should stock up with good quality 1,000 lb. and heavier cattle. If these are gotten in good flesh condition they will not have to compete with the western rangers, which come so plentifully at that time of the season. The only exception to this case is the putting in of very choice yearing and two-year-old cattle. If these are made fat they will also escape the above mentioned competition."

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Write for literature giving full information regarding this offer. "German Blemish Eradicator" is fully guaranteed to cure or money refunded. it cures where all other remedies fail. \$1.50 a box, by mail, postpaid.

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Private Sales dally. A number of draft and farm
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For Sale Cheap Brilliant bred registered Perchibles 16% hands high. Weight 1600 lbs. Sound and sure. Bell phone. J. C. BUTLER, Portland, Mich.

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Ayrshire Bull Calves. Berkshire swine. Eggs for setting. High bred stock, White & Buff Orplagtons, White & Barred Rooks, Light Brahmas, White Leghorns and White Wyandottes \$1 per 15. Mich. School for the Deaf, Flint,

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Herd headed by UNDULATA BLACK HED ITO \$3836, one of the best sons of PRINCE ITO 56046, and Grand Champion Bull at the Betroit and Grand Rapids Fairs of 1907, 1968 and 1909. Herd consists of Ericas, Blackbirds, Prides, etc. WOODCOTE STOCK FARM. Ionia, Mich.

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Top Notch registered young Holstein Bulls com-ming in themselves the blood of cows which now hold and have in the past held World's Records for mik and butter-fat at fair prices. MCPHERSON FARMS CO., Howell, Mich.

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JERSEY BULL CALF born May 12, '09, Dam's gave 10,550 tbs; mRk, tast year test-5g, Sire's Dam's gord 10,650 tbs. in 105g months, test 5.2g. The MIERAY-WATERMAN CO., R. S. Ann Arbor, Mich

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100 HEAD of ewes and their lambs. All young will be sold, worth the money if sold at once, J. B. GARDNER, Lock Box 437, Cadillac, Mich.

130 Reg. Rambofilet Ewes for sale, descended from the best docks and bred to a pure Van Homeyer and a ram sired by a Gilbert ram and inported dam. All in perfect health. To lots to suit buyers—none reserved. J. Q. A. Cook, Morrice, Mich.

HOGS.

LARGE ENGLISH BERKSHIRES.

Have a fine lot of apring pigs, both sexes. The type for profitable pork production. Vigorous and strong and of best blood lines. Satisfaction guaranteed. F. A. BYWATER, Memphis, Mich.

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Stock of both sexes and all ages for sale. Breeders of Guernsey Cattle, M. B. Turkeys, Barred Rock Chickens, Pekin Ducks. GEO. C. HUPP, Mgr., Drawer A. Birmingham Michigan.

BERKSHRES Unexcelled in breading. Selected boars, sows and glits. Choice dall pigs. T. V. HICKS, R. No. 11, Battle Creek, Mich.

FOR SALE-BERKSHIRES—Two choice Sept. boar pigs, and a few fall glits, stred by Handsome Prince. A. A. PATTULLO, Deckerville, Mich.

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NORTHERN GROWN BERKSHIRES,

PURITAN HERD of CHESTER WHITES The peer of any in America. Spring pigs for sale, WILL W. FISHER, Watervilot, Michigan.

A DAMS BROS. Litchfield, Mich., breeders of Im-A proved Chester White and Tannworth swine, Pigs, either breed, by 1st prize State Fair winners. Buff Rock, Buff Wyandotte eggs \$1-per 15; W. Orpington \$3 per 15.

Improved Chesters—Bred sows all sold. A for service, Orders taken for spring farrow. W.O. WILSON, Okemos, Mtch. (Both Phones).

DUROC JERSEYS
CAREY U. EDMONDS, Hastings, Mich.

WALNUT HILL FARM Herd of Duroes. Bred sows all sold.
35 fine fall sows, 35 fine fall boars ready for service. 100
spring pigs to date. Write J. C. Barney, Coldwater, Mich.

MULE FOOTED HOGS for sale. JOHN H. DUNLAP, Whitemsport, Onio

O. I. C. bred sows all sold. Have a few hand, GEORGE P. ANDREWS, Dansville, Mich.

O. I. C. A few bred sows. Orders booked for not akin. S. J. OOWAN, Rockford, Michigan

O. I. C. REGISTERED PIGS, 10 to 12 Glenwood Stock Farm, Zeeland, Mich. Phone 94.

O. I. C. Orders booked for spring pigs from State Fair winners. C. J. THOMPSON, Rockford, Mich.

30 P. C. fall Pigs by two champion boars. Booking orders for weared pigs by 10 different boars. WM. WAFFLE, Coldwater, Mich.

HEAVY BONED POLAND CHINA PIGS at reasonable prices. Eggs from big, business Barred Bocks in per 15, ROBERT NEVE, Pierson, Mich.

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Large Improved English Yorkshires.
The hogs that make good. September eiths bred to farrow next August or September. Spring pige of either sex. Pairs not alch. Satisfaction guaranteed.
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BREED GOOD HORSES.

Let no one imagine that the horse is soon to become an object of curiosity. No machine ever built or still uninvented will successfully dispute his reign. He has withstood the locomotive, merely permitting him to do the heavy work, and give him an easier life. Inventions will crop up from time to time, but none will dispute his place in people's hearts, for always, excepting the human race, the horse is the most beautiful thing made of flesh and blood. You may depend on it, good horses, especially good carriage, draft and saddle horses, will always be in demand. Buyers are today searching the country for good horses of all kinds. Very recently the opinion prevailed that the horse industry was on the high road to extinguishment from neglect, but whits human beings inhabit the globe, the love of God's noblest animal, the horse, will continue to demonstrate itself for his improvement.

Fashionable horse shows are frequent all over the country, extraordinary inducements being offered for fine animals, and I see in this and other facts, signs of increasing interest in the horse beautiful, with an attendant interest in breeding. Haphazard breeding has been the order of the day among breeders; they have been careless and bred without a purpose. Those days have now passed; the numerous stock and horse shows have enlightened the breeders of the country to take forethought enough to control by proper breeding, the quality of the stock

than a million horses each, lead in the statistical tables of the agricultural department. Kansas, Nebraska, Missouri and Minnesota have about 800,000 apiece and New York is eighth with 700,000. The number of horses in the United States, according to the Department of Agriculture returns, has risen from 14,-213,000 in 1904 to 17,057,000 in 1908. In the same time their value has arisen from \$978,000,000 to \$1,000,700,000. The greatest scarcity was in 1900 when but 13,500,000 were found. All this increase has come in spite of the fact that about ten years ago it was said that the cable, the trolley and bicycle, and later, the automobile, were destined to put the horse out of business. Instead of the horseless age approaching it is further off than ever.

A visit to the great live stock markets of the world, Chicago and New York in particular, would be of inestimable benefit to breeders and farmers by convincing them that the supply of horses, especially good ones, does not equal the demand. Those two markets control the sale of 250,000 horses annually and the supply has never equaled the demand, especially move both the source of great pride and of profit. It costs no more to raise a good principle for them, while the progressive farmer will have the scrub horse will produce the scrub horse will produce the scrub horse and the scrub farmer will have the scrub horse will produce the scrub horse and the scrub farmer will have the scrub horse will produce the scrub horse of reat pride and of profit. It costs no more to raise a good principle federic scrub horse and the scrub farmer will have the scrub stock that will lose him money while the progressive farmer will have the scrub horse will produce the scrub horse will produce the scrub horse will produce the scrub horse and the scrub farmer will have the scrub horse will produce the scrub horse can be marketed, and yet he persistently neglects the one step which will bring him good prices, and not while he does this will he make breeding pay.

Van Buren Co. J. W. GRAND.

LIVE STOCK NOTES.

An Illinois firm of country shippers recently marketed at Chicago a car load of 11-months-old hogs which tipped the scales at 25,400 lbs. and realized \$2,794, the largest sum ever recorded for a single car

to take forethought enough to control by proper breeding, the quality of the stock required by the horse markets of the world.

Illinois, Indiana and Iowa, with more than a million horses each, lead in the statistical tables of the agricultural department. Kansas, Nebraska, Missouri and Minnesota have about 800,000 apiece and New York is eighth with 700,000.

The number of horses.

Trime eggs have sold at wholesale in Chicago at 21½@22½c per dozen.

Well-bred feeding cattle have been in extremely large demand in the Chicage market recently for shipment to Ohio and Indiana, while Illinois stock feeders wantaged all they could get hold of. Packers have been grabbing the good feeders away from the outside buyers, because butcher stock was scarce and greatly needed, and light-weight, thin steers have been used extensively as substitutes for cows. Many country feed lots are bare simply because cattle to refill them are not obtainable at any reasonable prices.

The effort that is being made to establish an annual international sheep fair in Chicago during September after the fair circuit is over is based on the growing interest manifested in the sheep-breeding and feeding industry. Not for years has there been so wide-spread a desire among farmers to own some sheep, and there is a growing disposition to breed sheep on the farm, instead of depending altogether on purchasing sheep and lambs for fattening.

Upwards of one hundred pure-bred Clydesdale mares have been imported into Iowa from Canada during the past three months. They were purchased in Ontario.

Reports from Arizona and New Mexico are that there is colved.

scales at 23,404 lbs. 2nd talled 32,434, the largest sum ever recorded for a single car load.

"New Mexico will have some lambs, but Arizona is in a bad way," said Louis Trauer, the Albuquerque, New Mexico, dealer not long ago. "They are killing and feeding industry. Not for the lambs in Arizona to save the ewes, and forest reservations have been thrown open as an emergency measure."

A sheep dealer, who has made a motor trip of six hundred miles through New Mexico, says no rain has fallen in many parts of the southwest in a year, and there will be an absence of the usual spring movement of sheep to Missouri river markets this year. Wells have been bored, and sheepmen haul water to their flocks, grass being trampled out for miles around the wells.

Recent advices from England state that the English markets have ceased to depend largely on this country for hog products. An English letter says: "We are getting just as much from Denmark as from America in the shape of long sides.

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Four factories, employing 4,000 men, overwhelming demand.

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A child can master the car in ten min-A novice can run it and care for it.

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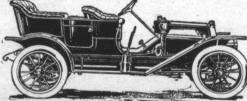
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Also WELSH MOUNTAIN PONIES OF BEST TYPE, Write for particulars.

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The Lawrence Pub. Co.,

Detroit, Mich.

DETROIT, APRIL 16, 1910.

CURRENT COMMENT.

Much has been said and through an awakened and active public from the general expression of such an from farmers, now, will exert a big in-interest. With this point in mind, a fluence. The hearing before the House careful review of the nine bills now be-Postal Committee is set for April 25, get if they go after it vigorously. At the tatives, Washington, D. C." same time the measure is sufficiently broad to prove the value of a parcels post service as a revenue producer, and will be the natural precursor of a general parcels post if this rural experiment is es-

fically for parcels service: postoffice supplied by rural carrier. Secroute to the postoffice or rural mend for elimination. der this Act, it is proposed to mail par- advanced prices artificially. cels for delivery on a rura! route em- bill has been introduced in the House by

tablished on a fair basis.

tion and not at the postoffice proper; and that on such route no parcels addressed to such postoffice proper shall be mailable under this Act." As we understand it, this provision would prevent a patron The regulation of this business can not living on a route emanating from the be otherwise than an experiment, hence postoffice proper from mailing a package the same during the trip, on the same route without carrying them to the dismail for rural route purposes, and makes the limit of weight 11 pounds. Nothing is said about size limit. The rates are: For packages weighing 2 ounces or less, 4 cents; 1 lb. or less, 5 cents; over 1 lb., 5 cents plus 2 cents for each additional while not anywhere nearly so liberal as service, and are more than two-thirds less than the present package rate. Perishable goods are mailable under the Act, though they must not be accepted more than three hours before the mail starts. There is a clause repealing the Act of April equally true with other perishable pro-24, 1904, which prevents transportation of merchandise by rural carriers for patrons. We do not understand why this With this prohibition reis inserted. pealed there would be nothing to prevent carriers from doing a private express business as previous to this 1904 prohibition. The parcel business should be maintained as a part of the mail service in order to demonstrate to the postoffice authorities its value as a revenue

We urge our readers to write to the Parcels Post written regarding the de-chairman of the House Postoffice and Legislation. sirability of a more ade-Postroads Committee, recommending that quate parcels post and the this Foster resolution be amended as suggested above, and that it then be reported manner which would correct the alleged importance of stimulating early legisla- gested above, and that it then be reported tion looking toward its establishment favorably to the House. Also write another letter to your own representative interest in the matter. But a definite, in the House, urging him to supoprt the rather than a general proposition is es- Foster bill, with proper amendments as sential to immediate and practical results suggested above. An avalanche of letters and may be held longer and yet reach fore the House Committee on Postoffices hence the letters should be written at and Postroads has led to the selection of once. The farmer who desires the estabone which appears to be most likely to lishment of the rural route parcels post pass, and which at the same time, with should surely take time enough to write some essential amendments, would be ac- and be willing to pay 2 cents postage. ceptable to the farmers of the country as The farmer who will not thus join in a beginning looking toward a more gen- the work of popular influence does not erally adequate parcels post service. This really deserve the great advantage that bill is known as House Resolution 16322, the parcels post will bring. Address letand was introduced by Mr. Foster, of ters to "Hon, John W. Weeks, Chairman Vermont. It provides for rural parcels of House Postoffice and Postroads Compost only, which the farmers of the coun- mittee, Washington, D. C.," and to your try badly need and which they can surely own representative, "House of Represen-

producer.

According to a re-To Regulate Cold communication cent from our Washington Storage. correspondent,

present indications are that congress will throw some restrictions around the cold The Foster resolution provides speci-storage business as a result of the inves-cally for parcels service: "First: From tigation of the increased cost of living the postoffices or stations from which one which is being conducted by a special or more rural routes emanate to any incommittee of the senate. A bill intendtermediate postoffice or to any patron on ed to prevent the holding of articles of any of said routes emanating from said food in cold storage for more than one year, and to require the labeling of cold ond: From any intermediate postoffice storage articles so as to indicate clearly how long they have been stored has been station from which said route emanates, introduced by Senator Lodge, chairman or to any intermediate postoffice or patron of this special committee. This bill proon that or any other rural route emanat- vides that an article held in cold storage ing from said postoffice supplied by ru- over one year, shall be deemed adulterat-ral carrier. Third: From any patron on ed within the meaning of the pure food any rural route to the postoffice or sta- law, and that an article not labeled to tion from which said route emanates, or show how long it has been in cold storage to any patron or intermediate postoffice shall be deemed to be misbranded. In in-or that or any other rural route emanat- troducing this bill, Senator Lodge deing from said postoffice or station sup-clared that it affected the whole question plied by rural carrier." Then follows a of the perishable food supply of the Amprovision which we suspect will prove a crican people, and also expressed it as disabling feature, and which we recom- the opinion of the committee, that some The clause reads: limit ought to be put on the use of cold "Provided, that in all cases where, un- storage for the purposes of maintaining

anating from a branch postoffice or station, such parcels shall be offered for
committee appointed to investigate food
mailing at such branch postoffice or staprices in the District of Columbia. This
tion and not at the postoffice proper: and probable outcome of the congressional inprobable outcome of the congressional investigation of increasing food prices is of interest to the producers as well as the consumers of the country.

consumers of the country.

The regulation of this business can not be otherwise than an experiment, hence its consideration at this time is of interest to every citizen. Without doubt, the development of the cold storage business has been of great benefit to producers of perishable products. The egg business, for instance, has been put upon an altogether different basis by this method of preserving them. Eggs are now going into cold storage at 21 and 22 cents perdozen, cases included, which means about 20 cents for the eggs. This is an indication that during the flush season of production, eggs will be maintained at this comparatively high price. A few years ago the case was altogether different, and during the spring months the price of eggs went down to a very low point, while the price during the winter season roses to a point above the normal, althoush perhaps not to a degree commensurate was that producers were obliged to preserve their eggs by such artificials means as were available, and that these eggs, when put upon the market, were an inferior product from the standpoint of the consumer. While in some seasons methods now prevailing permit the dealer to read the country.

April and May and distributed later in the season, yet competition takes care of the conflict between opposing organizations who seek control of the gambling subsended to produce the conflict between opposing organizations who seek control of the gambling subsended to produce the attention of the as delegation is a developed into open warfare, and last week shooting upon the streets brought the attention of the municipal authorities to take a hand in the fight. The 70,000 census enumerators begin heat week States this week. The day scheduled for beginning is Friday, but many of the multipal the census of the Unitage of the state of the same project with the same produced against the small the same produced against the small the same of the produced within 15 days, while in the smaller toward the new force in the small produced to firm to another patron living on a route eman- terest to every citizen. Without doubt, ating from a branch office unless he the development of the cold storage busitraveled to said branch office to mail it; ness has been of great benefit to producalso it would prevent a person living on ers of perishable products. The egg busia branch office route from mailing a ness, for instance, has been put upon an package under these rates to a person altogether different basis by this method who lives in the main office town. We of preserving them. Eggs are now going suggest that this proviso be cut out, and into cold storage at 21 and 22 cents per that there be substituted therefor the spe- dozen, cases included, which means about cific provision that rural carriers be con- 20 cents for the eggs. This is an indicastituted traveling postmasters with com- tion that during the flush season of promisison to stamp and postmark and de- duction, eggs will be maintained at this liver packages under this Act, also first comparatively high price. A few years and second-class mail, and to deliver ago the case was altogether different, and tributing postoffice to be brought out the price during the winter season rose again next day, as is now required. This to a point above the normal, although bill consolidates third and fourth-class perhaps not to a degree commensurate pound in excess of 1 lb. These rates, ferior product from the standpoint of the those provided by the Henry bill promoted ods now prevailing permit the dealer to by the Postal Progress League, are not reap good profits from eggs purchased in so high as to prevent a fair trial of the April and May and distributed later in the season, yet competition takes care of this fairly well for a series of years and in some years this kind of speculation results in loss instead of gain. What is true with regard to eggs is

ducts such as butter, apples, etc. But undoubtedly there is a better market for these products during the season of production than would be the case where cold storage were not available for keeping them for an indefinite time. But, on the other hand, from the standpoint of the health of the consumer, as well as his pocketbook, some kind of regulation might properly be applied to this busi-The labeling of the product with the date when it was stored, thus giving full publicity to the purchaser, would seem to be an equitable arrangement. A limitation of the time for which a product may be stored is difficult to fix in any evils of the storage business, and at the same time not interfere with commercial economy. Eggs, for instance, which are stored in April or May keep much better the consumer in better condition than those stored during the summer months. The natural cycle of production being a year, no harm can come from the limitations of the time of storage to this extent, if much good is not accomplished. The placing of the time at six months, as some have suggested and urged, would seem to be too short a time to allow for the storage of some perishable commodities, but there would seem to be no obc jection to the branding of the packages with the date on which the articles contained therein were stored, as this would allow an educated public to use their own discretion in fixing the relative value of

their little territory
Empire,
Emperor William of Germany, has
altered plans in connection with his visit
to the southern part of the Empire, so as
to be able to personally greet Col. Roosevelt upon his arrival at Berlin. The Emperor will have Roosevelt as a personal

National.

The mystic Shriners are holding their convention at New Orleans where a large delegation is gathered from all parts of the country.

An English syndicate has secured con-

An English syndicate has secured control of the Mexican crude rubber concern. Pine Bluff, Ark., was wrecked by a tornado Monday. Homes, stores, outhouses and other buildings were demolished.

The first trip made under the auspices of the Michigan Aero Club was begun at Jackson, Monday, when a crew of five persons journeyed from that place across the Ohio line, a distance of 90 miles, through a gale and rain accompanied by lightning. The balloon used was 75 feet in diameter and 90 feet high.

While engaged in driving a well on a farm near Webberville, Mich., two brothers were seriously injured by a dynamite blast.

Through a compromise of differences,

Through a compromise of differences, 3,000 coal miners who have been out on strike at California, Pa., went back to work Monday.

work Monday.

The number of persons killed in the street car strike in Philadelphia since it began eight weeks ago is 27.

The New York Central railway has granted a raise of 10½ per cent to telegraph operators of that line.

The Atlantic battleship fleet has returned to Hampton Roads from the southern drill grounds of Virginia where it has been at gunning practice.

MICHIGAN CROP REPORT.

(Continued from page 426).

(Continued from page 426),
moisture in March has somewhat retarded the growth of the plant throughout the entire state. The total number of bushels of wheat marketed by farmers in March at 111 flouring mills is 81,069 and at 93 elevators and to grain dealers 59,726, or a total of 140,795 bushels. Of this amount 108,329 bushels were marketed in the southern four tiers of counties, 30,613 in the central counties and 1,853 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in the eight months, August-March, is 8,500,000 and the amount of wheat yet remaining, in possession of growers, after deducting 2,000,000 bushels for seed and home consumption is 1,500,000 bushels. Eighty-four mills, elevators and grain dealers report no wheat marketed in March.

Rye.—The average condition of rye is 89 in the southern counties, 95 in the central counties, 98 in the northern counties, 93 in the upper peninsula and 92 in the state.

One year ago the conditions was 83 in

n- ur n-	tained therein were stored, as this would allow an educated public to use their own discretion in fixing the relative value of such products with fresh products when	Rye.—The average condition of rye is 89 in the southern counties, 95 in the central counties, 98 in the northern coun- ties, 93 in the upper peninsula and 92 in the state.
e-	the same may be had at a higher price.	One year ago the conditions -was 83 in
10%	Unquestionably such a law would be diffi-	the state and southern counties, 78 in
on	cult to enforce, yet with the co-operation	the central counties and 88 in the north-
on	그 하라면 아내는 그들은 살길하고 있어요? 그렇게 되었는 사람들은 사람들은 그리고 생각하다면 하다 하다.	ern counties and upper peninsula. Meadows.—The average condition of
ı e	of the public much good might result	Meadows.—The average condition of meadows in the southern counties is 90.
ill	from its enactment.	in the central counties and upper penin-
old		sula 94, in the northern counties 93 and
s-	HAPPENINGS OF THE WEEK.	in the state 92.
	4	The condition one year ago was 77 in
ng	Foreign.	the southern counties, 83 in the central counties, 86 in the northern counties and
ial	Countess Amerigo Vespuci, the last direct descendant of the Florentine navi-	upper peninsula and 81 in the state.
d-	gator who gave his name to America.	Live Stock.—The average condition of
of	died at Florence this week at the age of	horses in the state is 96, cattle and swine
ne	93 years.	94 and sheep 95.
old	The Persian government has directed	Fruit.—As a result of the mild winter and the warm weather in March, the
rly	a communication to Mr. Rockefeller asking that resources be supplied for the	buds are probably two to four weeks in
en	establishment of a school at Teheran.	advance of usual conditions at this date.
	One person was killed and 50 injured	with continued mild weather and no frost
an	by an explosion on the British steamer,	there should be an abundant crop of
0-	Ceirnrona off the coast of Dover, Eng-	The following table shows the prospect
ge	land, last week.	for an average crop of the various kinds
it-	It is estimated that \$15,000,000 will be spent in London to entertain Col. Roose-	of fruit in the different sections of the
od	velt during his stay in that city.	state.
to	The electoral campaign in France has	
ge	just been opened and there is promise	State. Southern Counties. Central Counties. Upper
	that it will be one of the most hotly	he he he he he he he
n-	contested elections France has had for some years owing to the rivalry between	tate. outhe outhe ounti
e-	the conservatives and the liberals.	S S C C C C C C C C C C C C C C C C C C
on	The Albanians are reported to be in	Apples84 84 84 85 89
n-	revolt and hope to gain the freedom of	Pears84 86 79 80 100
as	their little territory from the Turkish	Peaches82 83 83 81 95
ne	Empire.	Plums
ld	Emperor William of Germany, has altered plans in connection with his visit	
ng	to the southern part of the Empire, so as	In regard to the question "And many
0.000	to be able to personally greet Col. Roose-	orchards being sprayed for curl leg for 76
ar	velt upon his arrival at Berlin. The Em-	correspondents answer "Vee" and 190
by	peror will have Roosevelt as a personal	"No."

Magazine Section

LITERATURE POETRY HISTORY and **INFORMATION**



The FARM BOY and GIRL SCIENTIFIC and **MECHANICAL**

This Magazine Section forms a part of our paper twice a month. Every article is written especially for it, and does not appear elsewhere

"Pouring" a Concrete Railroad Bridge.

It is a little apart from the usual idea of things to speak of "pouring," rather than building a structure; yet, that is prove of little interest to them. Yet the while the steel strengthens the concrete. what modern concrete construction stands reverse is the case. The process of confor. Everything which is made of this struction is indeed comparatively simple. building material, the popularity and the Where this last mentioned bridge uses of which are ever on the increase, is literally "poured." Concrete was first to-order stone" and its use has penetrated almost every avenue of the building

last industries into which concrete has forced its way. Considering the length

Where this last mentioned bridge crosses the stream the bed of the Mau-Concrete was first mee river is of solid rock, which fact has employed in the foundations of buildings disadvantages as well as advantages, and work of that sort; but now entire Another thing which the engineers have buildings are constructed of the "made- to take into consideration is the annual break-ups of the ice, when it gorges up and then hurls its full force against the piers. Few bridges have to contend with However, bridge building is one of the such ice jams as the old Maumee develops

every springtime. At each pier the solid rock was taken

This reinforcement is used in all concrete work of any importance.

Everyone has seen some sort of concrete work under way. In every case, the mixture of sand,, cement, water and stone, usually termed "grout" is poured, when wet, into a mould and is allowed to "set," after which the mold is removed.

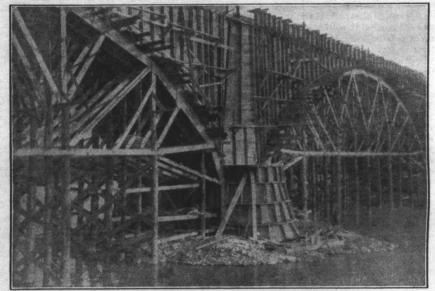
It was somewhat of a problem to construct the forms for this bridge so that they would support the thousands of tons of concrete in a viscuous conditions which must rest upon them, and not give way the smallest fraction of an inch at any point whatever. The least variation from exactness in the forms might mean the success or the failure of the undertaking.

In order to keep this cement exactly where it belonged, it was necessary to have the molds rest upon piles. Because of the rocky bed of the stream, these piles could not be driven in the usual manner. Holes to the depth of eight inches were drilled into the rock and into the ends of the piles; these were secured to their places by putting iron pins carts, some 16,000 tons of heavy, soft conboth up and down into the places thus

used to support the molds used in the great arches. So a large force of carpenters, not machinists or metal-workers, were kept employed. Had it been necessary to make the molds for the entire bridge at one time it would have taken more than twice as much lumber. How-ever, this "false" work was removed as soon as the cement had "set," after which it was put together a second time from the same lumber.

The iron rods used to reinforce the concrete are everywhere present. They bend around the arches, run crosswise through the piers, and stand up and down on the sides. Though these rods seemed to be in a hopeless tangle, each one was put in that position where it would most effectually serve its purpose. There are several different systems of concrete reinforcement, some of these employing rods with barbs, the others utilizing them in many different degrees of crookedness, straightness and confusion. known as the rib system is used in most bridges, though when the forms are removed not a sign of a rod appears.

To carry in pails, wheelbarrows or crete from a few feet to over a thousand,



The Forms and "False" Work for the Great Arches of the Bridge.

stone, without even a trace of iron or foundation. one think of it as a marvel of nature.

single concrete arch 231 feet from abutwater. A still longer span is being projected for a bridge at Rocky River near Cleveland. In southern California there is a structure of several spans that is 940 feet in length and one in Scotland that is over 1,200 feet long. Yet, the longest one that is now known in America is that constructed by the Lima-Toledo Traction Co., which is 1,220 feet in length, having some twelve spans or arches, and though only wide enough for a railway track represents an outlay of 16,000 tons of concrete and about \$130,000.

People are prone to believe that engineering enterprises of this sort are so

of time that it has been used to span out to the depth of three feet, and then rivers, the advances made have been truly the sides of this excavation were boardmarvelous. To see an arch curving ed up water-tight above high water for gracefully over a stream, as if a solid the mold, or "coffer-dam," for the pier The water was pumped out steel work, gives one the impression of of these coffer-dams and they became the strength and beauty, and almost makes casing into which the concrete material was poured and allowed to harden. But At Fairmount Park in Philadelphia is the weight of 28,000 tons of cement, steel and earth was not considered enough to ment to abutment, and 140 feet above the hold the structure against the fury of the river, and for that reason it was firmly anchored to the bed of the stream, as described below.

In order so to anchor the bridge, holes were drilled into the solid rock bed of little variation would result in an un-the stream three feet deeper than the stable structure. bottom of the coffer-dam. rods were firmly imbedded in these holes, arches, great quantities of lumber of exreaching up beyond the surface of the water. When the concrete was poured siders the present prices of lumber, and row at that, with switches placed at conabout these rods, it so adhered to them particularly of good lumber, it is easy to venient intervals, the whole running upthat when dry it was not concrete and steel, but "reinforced concrete," as it is in the casings, formed one of the concalled. The cement protects the rods tractor's chief items of expense. In adfrom the deteriorating effects of air and dition to this enormous amount of lum- motive power for a cable that pulled these



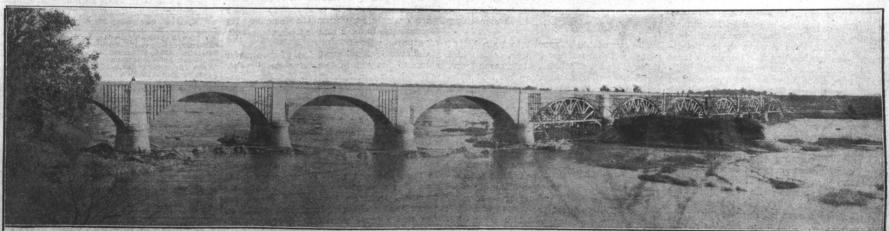
The Shell Above the Arches which was Filled with Gravel and Earth.

made for them. taken to secure a perfect fit, as a very

Especially so, in the molds for the cellent quality were used. When one consee why the 400,000 feet of lumber used on the top and across the molds, were in the casings, formed one of the con- used. A small gasoline engine placed at technical and complicated that they will moisture, preventing rust and the like, ber, some 800 piles, each 25 feet long were cars a part of the distance. These cars

Great care had to be from the points at which it is prepared would be a herculean, and moreover, an expensive undertaking.

Thus it is, that in order more expeditiously to handle the soft concrete, small hand dump-cars, running on a doubletrack narrow-gauge roadway, very narone end of the structure, supplied the



Concrete Bridge Across the Maumee River, which is Probably the Longest Structure of its Kind in this Country.

have a sort of hopper which is mounted were made for it at each so-called "ex-disappointed, said quite frankly that Allan upon a pivot. When one lifts one side pansion joint," and the whole road-bed Woodrough's knowledge of mineralogy of this hopper the other is lowered and is dry as a well tiled farm. the grout is dumped.

Everyone has noticed the expansion and expense. It was not necessary that the tracks of contraction of wires and other metal the traction company be laid in the ce- work on the hot and cold days. Though marked a neighbor, while purchasing Gravel and sand come cheaper concrete does not tighten and loosen so commercial fertilizer, ment. Gravel and sand come cheaper concrete does not tighten and loosen so commercial fertilizer, "to require the than does cement, crushed stone and much as steel does, these forces are pressonand. For these reasons the part of the ent in a measure, and must be reckoned." The dealer explained: "That is to prebridge above the arches was nothing but with, or the bridge might be torn apart, vent the manufacturer from filling in a a mere shell and this shell was filled with To counteract these forces the designers lot of useless stuff in place of higher gravel or other filling material, and the placed so-called "expansion joints" at priced ingredients. The formula is of no tracks laid upon it.

each pier, at the point where the arches value to the farmer except as it protects One would think that this slell might come together. In cold weather, the become filled with water, and that owing points where these spans come together facturer." to the solidity of the structure this water will be several inches apart, but they fit would not drain away. However, escapes perfectly during the heat of summer.

ALLAN WOODROUGH'S EXPERIMENT. BY XENO W. PUTNAM.

the lines of Allan Woodrough's face al- understood, he told them about their qualthough the secretive glance he gave ities, habits, and life history. It was not around revealed some measure of disap- long before it was noticed at school that

time of life," he said aloud, "but I never possessed many original and broad ideas, had the chance at school I wanted, and Mrs. Woodrough, too, was becoming a I'm going to take it now."

going to take up that home study course," said a quiet voice behind him.

Allan gave a guilty start. "Yes, I am. wife; but it's right for you to know my with me?

school days are over."

out his life."

"That means the practical affairs he meets on his road."

Allan answered thoughtfully, "Perhaps; If that is the knowledge he is in need of, for the plant is an annual and as soon If he is deficient in something that he as the seed already in the ground is exought to have learned at school, I believe hausted it will die out of itself if he is

would be useless, though visions of neglected work and shiftless management a good many dollars to me," the honest filled her with apprehension. Their farm old Squire acknowledged shortly afteruries. In her mind it was a clear case of not get a dose of the same thing? letting well enough alone. However, once she was too prudent to argue the point further.

Allan began his course of study as seed." methodically as he did everything else, One of the Woodrough fields had been by setting apart two hours of his time an eyesore to him ever since it was ful thought over what he had read while make good. Year after year crops failed walking about the farm noting its condition, looking up his stock, etc. Then he put it all resolutely out of mind and only thought about the work he happened to

At the end of the first week he was surprised at the amount of time he gained only thing, even in the weed line, that by this system of concentration. Instead would flourish. Through his study of botof the new study course crowding out his any he discovered that sorrel flourished farm duties it actually helped him in getting them done on time. There was no soil. Some of the commercial fertilizers dilly dallying over the task in hand. He he had been using on that field at high had an appointment with his books at a prices were actually making it worse, his certain hour and, instead of letting his chemistry told him. What it needed was work drag along, pitched in and worked lime, and a single application accomphis best, in order to be in time for his lished wonders. In two years' time the engagement. People said he would break field was as good as any on the place. himself down in a little while, but he didn't. The one task was a rest from the morning, while passing the Fisher resiother and both were easier because of the variation.

one thing. He had little time for village you way home tonight; I have something gossip and, as the weeks went past, lost for your father." interest in it. His chats with the neighbors were confined rather closely to local stone, weighing a few ounces. had not time to listen to it.

In his home, the neighborhood gossip evening talks with his family partook of the more interesting topics of his study and their application to his own life. This the children to save up the odd flower, or stone, or bug, until time for their talk with papa in the evening. If the specimens were new to him he tried to look iron pyrites. Mr. Fisher, although greatly the mercenary standpoint as from the R.S. & A. B. LACEY, Dept. 89, WASHINGTON, D. C. Est. 1869

The gleam of settled purpose tightened them up and name them; if something he the Woodrough children were uncommonly "It may be a foolish thing to do, at my well informed upon general topics and social favorite in the village. Of its gos-"I suppose that means that you are sip she was hopelessly ignorant, but, taking her in all places and with all people, she was surprisingly entertaining.

"I wish you would take this plant home I did not know that you were in the room, and ask your father what it is," Squire Welton called to the Woodrough children What is to hinder your joining one evening as they were passing. have ten acres of newly seeded meadow The quiet little woman shook her head, nearly covered with it. Must have gotten it in my grass seed, I guess.'

Allan flushed a little at the implied reproof. "And mine. Still it is said that a he had no difficulty, thanks to his botwise man will continue to learn through- any, in identifying it as a very troublesome weed.

"Tell Mr. Welton that, if he will keep his field mowed close and not permit any seed stalks to mature he will be all right. it means that, too. It means whatever careful not to let any more seed form. he needs to know." Mrs. Woodrough shook her head, uncon-vinced, but said no more. She knew it neighborhood."

was in a good state of cultivation, brought wards. "I would otherwise have plowed up from one of shameless neglect by years the field all up again, though I just had hard work. It was nearly paid for, it newly seeded and a splendid catch. By They were blessed with the comforts of the way, how does it come that, with all life and even indulged in some of its lux- the seeding you did last season, you did

"I noticed some unfamiliar seeds in the her husband's mind was really made up, timothy I looked at and put off buying until I could learn what they were. When I found out I went elsewhere for my

for reading, followed by an hour of care- cleared. It looked all right but failed to there until Allen would have sold it, if he could have done so, at less than half what his other fields were worth. His course of home study finally set him to thinking. Year after year rank growths of sorrel would come up there, about the where there was an excess of acid in the

> dence on her way to school, to hear Mr. hood. Fisher talking in great excitement. Hap-

The "something" proved to be a bit of of ground wires. "Tell him crop conditions, and neighborhood mar- there are tons of it where this came from, came to his aid in the temporary repair ket news, such items as were valuable to down near the line between us, and if he of machinery in the midst of a busy seahim. In Squire Welton's quarrel with will go in with me we will put down a son; in setting up and caring for new Deacon Smith he took no interest and shaft at once and be rich for life. Its machinery and in rigging up home-made gold ore of the richest kind.""

Elsie took the piece, though with no was eliminated from his interest and his great enthusiasm. Still she did not like only satisfied himself that there was to tell this old man, what she very well enough practical good in home study to knew, that the stone contained no gold amply repay him for the cost and time whatever, nor would he have believed her spent, but had convinced his wife as well: gradually awakened an interest in the if she had. Her father examined it caresame subjects among the other members fully, then took it to the little chemical as active students as was he. Frequently until it became quite the thing among laboratory he had fixed up and presently proved by chemical analysis what his turns that yielded a handsome profit on geological knowledge told him at the be- the whole investment. ginning, that the gold was nothing but

saved him a good many dollars useless

"What a piece of foolishness it is," re-

him from the dishonesty of the manu-

Allan smiled but said nothing. In his hand he had some slips of paper containing chemical analyses of the soil from different fields he was breaking up that season; also of the grain he wished to grow upon each. Thus, knowing the chemicals which each crop needed in the largest quantities, the amount of that and of other chemicals which existed naturally in the soil of the field, he examined one bag after another and, by studying the printed formula thereon, was able to pick out the kind, of all others, which he needed on that particular field to produce the special crop he wanted.

Around the buildings, too, Allan's increasing knowledge of general mechanical principles enabled him to construct many an important labor-saving device. Water was made to convey itself where before it had not been deemed possible. Levers took the place of brute lifting. Pulleys and the farm team supplied the place of extra men

In the garden and orchard trees and crops were saved from insect pests far easier and cheaper than when no real knowledge of the life habits of the insects existed. By knowing just when and how to strike it was found that they had previously been killing many a gnat with a sledge-hammer and, in some cases, had been rendering the use of sledge-hammers really necessary where very little force would have been needed had it been applied at the proper time. Often local conditions so modified causes that the effect of treating them by some general When the real rule was not satisfactory. object and the why were thoroughly understood the general rule was modified with some intelligence to meet the special condition.

The intelligent management of the Woodrough farm became so generally understood that, with the advent of a lightning-rod agent in the neighborhood everyone watched Allan Woodrough to see if he considered rods efficacious, when it became known that he had ordered his buildings rodded, quite a local sale was assured the agent at once.

Most of the rods were erected after the agent's own plans and rules. Allan, with a good general knowledge of electrical principles, saw to it that the ground connections were carried down to moist earth; that the rods were not insulated from the buildings but were fastened out from them by supports which were good electrical conductors but somewhat inferior to the rod itself. The arrangement and placing of the points received his special attention. During the season several of the rodded buildings were struck, because the agent had been careless in erecting or ignorant of the principles to which the rods were servants. Allan Woodrough's rods, thanks to his personal knowledge of electrical laws, really protected his buildings. Those of some of his neighbors, because of being improperly put up, were either useless or a positive menace; hence their cost was worse than thrown away.

Even in his fencing Allan's knowledge Elsie Woodrough was startled one served him in good stead. A lot of woven wire fencing was sold in the neighbor-Not long after it was put up many animals standing near it were His new task, however, did cut into pening to see her he shouted: "Stop on killed by lightning. Allan Woodrough's were entirely safe from that source. He foresaw the danger and introduced plenty

Constantly his knowledge of mechanics substitutes.

At the end of a few months he had not in fact, she and the children were quite a single instance brought in direct re-

But after all, it was not so much from

Abandoned It For the Old Fashioned Coffee was Killing.

"I always drank coffee with the rest of the family, for it seemed as if there was nothing for breakfast if we did not have it on the table.

"I had been troubled some time with my heart, which did not feel right. This trouble grew worse steadily.

"Sometimes it would beat fast and at other times very slowly, so that I would hardly be able to do work for an hour or two after breakfast, and if I walked up a hill, it gave me a severe pain.

"I had no idea of what the trouble was until a friend suggested that perhaps it might be caused by coffee drinking. I tried leaving off the coffee and began drinking Postum. The change came quickly. I am now glad to say that I am well of the heart trouble and attribute the relief to leaving off coffee and the use of Postum.

"A number of my friends have abandoned the old fashioned coffee and have taken up with Postum, which they are using steadily. There are some people that make Postum very weak and tasteless, but if it is boiled long enough, according to directions, it is a very delicious beverage. We have never used any of the old fashioned coffee since Postum was first started in our house."

Read the little book, "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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40 Men Wanted-To prepare for next R'lway Mall, inations. \$50 to \$125 monthly. Common education sufficient. Influence unnecessary. Preparation free. Write immediately for dates and places of coming exam's. Franklin Inst., Dept. S. 48, Rochester, N.Y.



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E PAY \$90 A MONTH SALARY and all expenses to introduce Poultry and Stock Powders, Steady work, GRANT CO. 5, Springfield, Ill.

PATENTS WORTH FORTUNES

BY JENNIE VICKERY.

When he came in contact with the outfaction in knowing something of what the and there, advising him to look "under world was doing. When he took up a the sofa," "behind the mirror over the newspaper his own knowledge of political mantelpiece in the parlor," etc. As each economy was behind what he read and note is found another. side world, as all men must with ever a renewed interest, whether it co-incided with his own view or not. When he attended a public gathering, discovered, the certainty that he could follow all that was said with intelligence if not with exa profit not to be despised. Or if, as freupon to express his own views, he had something within him worth saying.

study course has opened our eyes to a assigned to each child, thus interpreting study of the things with which we are each one's idea of a flower garden. The surrounded in our own home; to a higher various pages might be headed in some appreciation of nature; to a greater respect for the Divine handiwork; to a "The broader view of life; a greater confidence flows," etc. in fellow man; in short, to a deeper, truer and better life than we could otherwise have lived."

A "TWO-FOOTED" TREE.

BY HARRIETTE V. DAVIS.



The very unusual appearing tree pictured above stands upon the farm of Walter Placeway, in Shiawassee Co., Mich. It has two distinct bases, also two trunks which, however, unite into one at a point about three feet from the ground. The tree is said to have grown that way from small sapling. No one professes to know just how its peculiar condition came about but it is probably the result of the union, either through design or by accident, of two very young trees.

HAVING FUN ON MAY DAY.

BY M. Y. M.

The old-fashioned method of celebrating May Day by hanging baskets of flowers on the door knobs of one's friends has fallen into the ranks of the forgotten by a large majority, more is the pity, for a prettier custom it would be hard to invent. However, May Days must be celebrated some way, and nowadays games and sports of a more modern character are looked for. Some of the following may therefore solve the problem of entertainment confronting some would-be May Day entertainer.

Flower Hunts.

Flower hunts are not new, but they are always acceptable, particularly for little folks, if at the end of the hunt they are rewarded by some prize. may be arranged in one of several ways: Simply by scattering a given number of flowers through the rooms, or about the lawn if an out-of-door affair is planned, and allowing so many minutes hunt, the possessor of the largest number of flowers at the end of that time winning the prize, if any, or the honor, at least. Or, second, the flowers may be tied to strings which are then wound in devious ways throughout the house. The party reaching the end of his string first, and

searcher deeper into the mystery, until, when least expected, the flower itself is

To Make a Flower Garden.

Blank pages tied together, with scissors pert knowledge gave him a pleasure and and floral catalogs, magazines, etc., will serve as materials for another interesting quently happened, he was suddenly called pastime. Provide, also, some gummed stickers, or paste and brushes. Place the "I am glad we undertook it, wife," he booklet, each guest being provided for, ou, and some said a year after the experiment was and give the subject to be covered on sary amount of "push" is going to be the could that by her be done.

Could that by her be done.

Could that by her be done.

As to that verse 'bout the spared rod, Which grandpa at her hurls, Dear grandma says, "That don't fit boys, That text was writ for girls!"

That text was writ for girls!" way, as "Where the fountain plays,"
"The Fernery," "Where the brooklet

Flower Charades.

Another game which all will enjoy is a version of the old-time charades, flowers entering into the charades used. For instance, take the pansy, using two pans and a letter E to represent the flower. Or "sweet William" can be represented a boy of that name eating candy or other sweets. The list can be lengthened indefinitely. If one does not care to act out the charades, use objects instead to represent the flowers, and provide the guests with paper and pencil, numbered spaces being allowed for as many flowers as are represented by the various groups of objects. Thus, a picture showing rows of vegetables or flowers might answer for "rose," while a gilded stick will do for "goldenrod." A picture showing flocks of birds will serve for "phlox." A calendar with the month of May prominent, accompanied by a small dish of flour, or decorated with a flower of some kind, will represent the "May flower;" and a top dog perched upon a bit of wood and are desirous of becoming the owner will serve for dogwood blossom.

Floral Toss and Catch.

Young people will enjoy this floral game with paper flowers. Choose sides, and have half of each side stand about two yards apart facing each other. The other side should stand in like manner at right angles from the first lines, thus forming a square when all are in place. members of the same side, but standing directly opposite, must keep several flowers in constant motion, throwing them from one to another, while the opposing side endeavors to capture them as they pass. Time is allotted, and the side having the most flowers at the end of the specified time is declared winner. This becomes very exciting, and creates no end of fun. It is understood, of course, that the positions first taken must be retained, and all efforts at capturing the flowers must be made with the outstretched arms.

A good test is to see who can name To do, ere falls that night for toil too the most flowers offhand in the shortest late, length of time. Prizes suitable for games

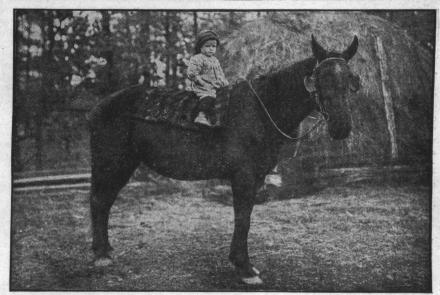
esthetic that he derived his satisfaction. thus discovering the flower attached, is of this character may take the form of the winner. Or, third, each participant potted plants, cut flowers, baskets of wild may be given a different number, and be flowers, candled violets, rose petals, etc. guided in his search by notes placed here Or jewelry in floral patterns, vases, books

Boys and girls, just a word in regard to this contest. We have watched this contest from its beginning and, considering the value of the pony and outfit, the lack of interest shown in the contest has greatly surprised us as every boy and girl knows the value of a Shetland pony and an A 1 outfit-cart, harness, saddle name and date on the outside of the and bridle. The contest ends on April

When grandma is at our own house, Where she comes once a day. Then brother takes great liberties And no one will obey.

Yet grandma thinks this is all right, 'Cause brother is a boy, And says, 'Now don't be selfish, Sis, He must his hands employ!"

Truth, should he think that he must have The stars, the moon, the sun, Our grandma'd snatch them from the sky, Could that by her be done.



"Seems to me 'at 'Beauty' Pony an' 'at Saddle 'ud be More my Size."

ber of points. If you are not a contestant "HAB-ENI-HAN"-A GAME FOR BOYS. of the pony and outfit, and want to begin right away, you may send us a one-year subscription at 75 cents; a two-year subscription at \$1.20; a three-year subscription at \$1.50, or a five-year subscription then. at \$2.00. This subscription will count in sent. A picture of the pony, cart and at it and see if it is not worth a little on this paper at equal distances apart of your time between now and April 30.

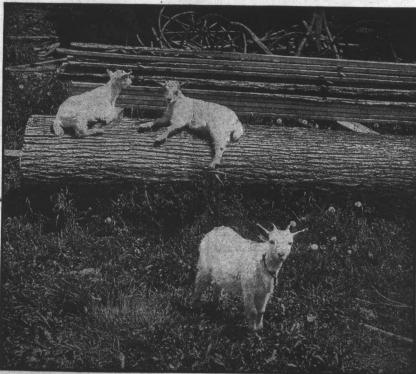
OPPORTUNITY.

BY EUGENE C. DOLSON.

Life bears us on; the seasons slip away, Again and yet again night follows day, And day succeeds the night.

Ay, time is brief allotted us by fate; So may we strive with purpose clear and true,

The work we yet may do.



Genuine Kid Comfort in a Delightfully Sunny Back Yard.

BY GENEVA M. SEWELL.

This is an old, old game. It dates back to the time of Joseph, but is just as interesting to the boys to play it now as

For the game a target and a bow and contest. All contestants get free arrows are needed. The target should be premiums or cash on all subscriptions at least two feet in diameter, and can be made on any light colored cardboard or harness will be found on page 437. Look paper. Draw twelve concentric circles To make the circles drive a tack, with string attached, into the center of the paper; at the other end of the string attach a soft lead pencil. The string must be long enough to make as large a circle as possible on the paper. For the next One after one, in swift and silent flight; circle take a reef in the string for the distance you wish the circles to be apart and continue in this way until you have twelve circles, each one just the same distance inside of the one before. Then ink them all in with black ink or black paint, making them very clear and distinct. Number the places between the lines, calling the outer circle "one" and increase with each one until the inside circle is numbered "twelve," which is the smallest one. Tack the cardboard on a plain board and set it up in one end of the room, or fasten it to a tree upon the lawn, and your target is ready.

Each player should be provided with a bow and arrow and with twelve little circles of cardboard with a pin stuck through them and with the initials of the player printed plainly in black ink on them; these are the counters. When ready to play, each one stands on a mark and shoots at the target and sets his pin at the place he hits if he hits within the circle. If a player hits a black mark he loses his turn, getting no count. If he misses the target he is out of the At the second round a player may move his first pin the number of spaces corresponding to the new strike, or he may place a new pin in the new circle he has made, always moving toward the center. Suppose you struck circle two in the first round and four in the next; you could place your first counter within circle six, or you could leave the first one and place a new one in four; if you strike a circle near the twelve, say at ten, and next time strike five you can move the counter from ten to the inner circle and take a new one and use up the rest of the count by placing it on three, or you can carry a pin already placed forward the three spaces.

If one player has a pin in a circle and another one succeeds in putting two pins in the same circle, he captures the oth- darkness protects it from its enemies, the er's pin and removes it; if, however, a player strikes a circle already occupied by two pins he does not lose his pin-un-ties, and not one counteracting vice! less the two belong to the same player. To safeguard himself it is a good idea to keep two counters in a circle where possible.

The game consists in a specified number of points, from twenty-five to fifty if two players, but more than that if you have a number playing; a hundred makes a good game for the evening. When one player has lost all his pins or counters the game is ended. Each player counts the number of his pins which have reached the center, and the number he has captured, and the one having the most adds to his all the ones left in the circles on

The object is to protect your own pins and capture as many of the other players' as possible, and to get as many of your own to the center as you can. It waxes very exciting and interesting at times.

OUR DEBT TO THE EARTHWORM.

BY HOOSIER LAD

Farmers owe a debt of gratitude to the earthworm. One enthusiastic writer asserts that the earthworm is more useful than the horse, the cow or the sheep, for these domestic animals live on vegetable food while the earthworm is the tiny little creature that makes vegetable food possible. He states that it makes the soil which produces the flowers that adorn our gardens, the vegetables that crowd the markets, the fruits that load the trees, as well as the grass in the field.

Although it is a low animal organism, it stands at the head of all created things in usefulness to man. It is not provided with eyes, but in some way it can distinguish between daylight and darkness; it has no ears, and therefore it can not hear; it seems to have a slight sense of smell, while its sense of touch is very well developed. The same writer mentioned above says, "The general appearance of the earthworm is familiar to most people. It is long, red and harmless, without apparent means of locomotion. But for so small an animal it is not a bad traveler. It does not propel itself by a wriggling motion like a snake; a strange arrangement of double muscles-one set circular and the other longitudinal-enables the worm to push forward the anterior end of the body and then pull up the posterior end.

"How does the earthworm bore through the ground? It does not tunnel in railroad fashion exactly, although there is some similarity. The worm has a pointed head on which are little bristles turning backward. These little bristles are found in every segment clear to the tail. These bristles act as tiny levers, like the oars of a boat. The animal pushes its way through the soft ground, but when the ground is too hard it simply swallows it. In this way the earthworm works and feeds at the same time. It finds enough nutrient matter for food in the earth swallowed in excavating the burrow, and when it has a load thus stowed away it comes to the surface and dumps the debris, as a tunnel workman wheels out a barrowful of broken rock."

And here is where its usefulness to the farmer makes its appearance. The soil thus brought to the surface of the ground is "triturated and so mingled with natural secretions of the worm that it is converted into the dark mold which gardeners and farmers call the richest soil." writer should have added another merit to his appreciation of the earthworm, one of considerable importance—that of rendering the ground porous, so as to more freely admit the air and moisture.

It might be argued that these animals are small and their number not very great, and that the amount of good they do is of an infinitesimal nature. Let that eminent naturalist, Darwin, who made them a study for over thirty years, speak their defense In many parts England, a weight of more than ten tons of dry earth annually passes through their bodies and is brought to the surface on each acre of land, so that the whole superficial bed of vegetable mold passes through their bodies every few years." He further says that "archaeologists ought to be grateful to worms, as If those we trust fail sometimes to attain, they protect and preserve for an indefinitely long period any object, likely to an indeed, from censure to refrain the land, by burying it beneath their coating.'

The activity of the earthworm is confined to the hours of darkness, first, because it needs moisture and that is when it is most abundant; secondly, because

It is a creature of many excellent quali-

SMILE PROVOKERS.

Mothers will appreciate the following story by a young and devoted father, as told by one who was there:

The baby was his first and he wanted to weigh it. "It's a bumper," he exclaimed. "Where are the scales?"

The nurse hunted up an old-fashioned pair and the proud father assumed charge of the operation.

"I'll try it at eight pounds," he said, sliding the weight along the beam. won't do. She weighs ever so much more than that."

He slid the weight along several notches farther.

"By George!" he said. "She weighs more than ten pounds-11-12-13-14. Is it possible?"

He set the baby and the scales down and rested himself for a moment.

"Biggest baby I ever saw," he panted, resuming the weighing process. "Fifteen and a half-16! This thing won't weight her. See, sixteen is the last notch, and she jerks it up like a feather. Go and get a big pair of scales at some neighbor's. I'll bet a tenner that she weighs over twenty pounds, Jessie," he shouted; "she's the biggest baby in this county weighs over 16 pounds.

"What did you weigh her on?" inquired the young mother.

"On those old scales in the kitchen." "The figures on those are only ounces," she replied quietly. "Bring the baby here, at once, Jack."-M. A. P.

It happened in Sunday school. None of the children had studied their lessons, apparently, and as for Johnny, the new

apparently, and as for Johnny, the new boy, he wasn't supposed to know much about it, anyhow.

"Now, Willie," said the teacher, "who was it swallowed Jonah?"

"I dun'no," gigsled Willie.

"Bobbie, can you tell me who swallowed Jonah?" continued the teacher.

"You can search me," said Bobbie.

"Tommy, who swallowed Jonah?" asked the teacher a little severely this time.

"Please, ma'am," whimpered Tommy,
"it wasn't me."

"Well, I declare!" ejaculated the teacher. Then turning to the new boy, she asked, "Johnny, who swallowed Jonah?"

"I'll bite," said Johnny. "What's the answer?"

"Gee, I wish I waz a inventor," ex-claimed Jimmy, loafing outside the baseball park.
"W'at fur?" demanded Mickey.

"I'd invent a knothole w'at yer could carry 'round wid yer and stick in a fence anywheres yer pleased."

Hewitt-Does your wife speak more

Hewitt—Does your whe speak more than one language?
Jewett—She speaks several.
Hewitt—Does she speak them fluently?
Jewett—She speaks any language fluently that she speaks at all.

Cassidy-Phwere are yez going in thot Cassidy—Tiwere are yez going in that new suit?

Casey—Oim going to ask old man Flannigan for his daughter's hand.

Cassidy—Th' divil! Ut seems a pity to ruin a new suit that way.

Little George, aged three years, was visiting his grandfather in the country, when he came running to his mother, holding his finger and screaming at the top of his voice. "Why, what is the matter, George?" asked his mother in alarm, as she wiped away the big tears rolling down his cheek. "O mama!" walled George, "a bee stepped on me;" a bee stepped on me!"

Sufferer—I can't stand it any longer. I'm going to the dentist's this instant and have this tooth out.

Scientist—Nonsense. Your tooth doesn't ache. It's only your imagination.

Sufferer—Then I'll have him pull out my imagination.

An Ohio school teacher tells the follow-All Onto school teacher tells the follow-ing incident that happened while he was teaching. For a little tot to get breakfast and breastworks mixed is not so bad after all when you come to think about it, but it is funny all the same: Teacher—Now, Jimmie, you may tell us about Washington's journey to Fort Necessity.

Necessity.

Jimmie—Washington started across the mountains with 150 men, watching so that the Indians would not surprise him. He got to Ft. Duquesne, but could not whip the French, so he went to Great Meadows, threw up his breakfast and called it Ft. Necessity.

UNREVEALED.

BY EUGENE C. DOLSON.

motives they perhaps misunder-Our

For this we know, that men hold honor Humanity forever upward strives; Though one may err, yet will his heart revere Sincerity and truth in other lives.

Amatite on Roof of Dunn Edge Tool Co., Oakland, Me,

matile Roofing NEEDS NO PAINT

VERYTHING nowadays is constructed with the view to save time; to save labor; to

These are the primal points which have made Amatite cessful. That these things have been achieved such letters as the one below fully prove.

"Oakland, Me., Feb. 2, 1910.

Barrett Mfg. Co.

During the past twelve years we have used several different brands of Ready Roofing; some of these have cost much more than Amatite, but we are free to say that we prefer the latter. Not only does it give fully as good service, but it requires no painting or coating, assome of the others do. We consider this a most desirable feature.

Yours truly,

DUNN EDGE TOOL CO.,

By R. W. DUNN, Treas."

These letters come to us constantly.

Amatite doesn't leak, and never needs to be painted. Its cost is low; its service long. It saves time, labor and expense.

Its real mineral surface and coal tar pitch waterproofing are responsible for this. We know what Amatite will do. We want you to know. Therefore we offer you a sample free.

Just send yourname on a postal to nearest office. BARRETT MANUFACTURINGCO.

New York Chicago
Philadelphia Boston
Cincinnati Minneapolia
Cleveland Pittsburg
New Orleans
Kansas City St. Louis
London, Eng.





describes Sewing Machines from \$8.45 up. Fill out the

This Six-Drawer Automatic Lift Drop Head Style Sewing Machine

Has the following special features which have made this model famous:

Ball Bearing Short Needles Extra Long Shuttle Disc Tension Automatic Bobbin Winder Special Needle Plate

Independent Positive Cam Take-Up Automatic Tension Release Extra Large and Strong Feed Round and Hardened Needle Bar

OUR SPECIAL SEWING MACHINE CATALOG is a book you must have if you contemplate buying a sewing machine. It shows all our various models, many of them in colors just as they appear; illustrates the various parts, tells you all about everything you want to know, explains fully our twenty-year guarantee, our three months' trial contract, and describes the uses of all the special attachments. Fill out this coupon carefully with your name and address. The very day we receive it we will send you a free copy of our special Sewing Machine Catalog.

Sears, Roebuck and Co. Chicago, Ill. S. M .- Michigan Farmer. R. F. D. No. P. O. Box No. -Street and No. Sears, Roebuck and Co., Chicago, Illinois

Would You Pay \$2

For a Herman Boker Razor that was worth double that? One you knew absolutely would shave you smooth as a baby without your feeling it. We have just 100 of that kind. They are for our sub-

Stomach **Blood** and Liver Troubles



Much sicknes starts with weak stomach, and con-sequent poor, impoverished blood Nervous and palepeople lack good rich, red blood. Their stomachs need invigorating after all, a can be no for, man stronger than his stomach.

A remedy that makes the stomach strong and the liver active, makes rich red blood and overcomes and drives out disease producing bacteria and cures a whole mul-titude of diseases.

Get rid of your Stomach Weakness and Liver Laziness by taking a course of Dr. Pierce's Golden Medical Discovery - the Great Stomach Restorative, Liver Invigorator and Blood Cleanser.

You can't afford to accept any medicine of unknown composition as a substitute for "Golden Medical Discovery," which is a medicine OF KNOWN COM-POSITION, having a complete list of ingredients in plain English on its bottle-wrapper, same being attested as correct under oath.

Dr. Pierce's Pleasant Pellets regulate and invigorate Stomach, Liver and Bowels.

Rider Agents Wanted



What Governor Deneen, of Illinois, Says About It:



Governor Deneen, of Illinois, owns a section of land in Saskatchewan, Canada. He has asid in an interview:

"As an American Lam delighted to see the remarkable progress of Western Canada. Our people are flocking across the boundary in thousands, and I have not yet met on the control of the

125 Million Bushels of Wheat in 1909 Western Canada field crops for 1909 will easily bring \$170,000,000.000 in eash. Free Homesteads of 160 acres, and pre-emption of 160 acres, and pre-emption of 160 acres, and pre-emption of 160 acres, Many farmers have paid for their land out of the proceeds of one crop. Splendid cilmate, good schools, excellent railway, accommodation, low freight rates, wood, water and lumber easily obtainable. For pamphlet 'Last Best West,' particulars as to suitable leastion and low settlers' rate, apply to Sup't of lumigration, of twa, Can, or to the Canadian Government Agent. (6) M. V. McInnes, 176 Jefferson Ave., ttroit, Mich.; C. A. Laurier, Mar-ette. Mich.

e Want a Man IN YOUR COUNTY all on every person that has a ephone and show them our "NO RISK" LIGHTNING ARRESTER erate: Notelephone is sare without one. We allow our representatives 50% commission and they make good money. Write today for our splendid proposition. Do it now. W.E. ASHBY TELEPHONE CUT OUT CO: 446 PHILIPS BLK. DES MOINES, IOWA

lamp for your home and make big profits. Send name and address today,
Factories Sales Co., Dept. 108, Kansas City, Mo.

12 Your Name in Gold 10c

KINKS.

Kink I.-Botanical What-Is-It?

1. What is the common name and the botanical family of the plant represented by the above drawing? 2. Tell the sort of place in which it grows. 3. Tell when it makes its appearance.

Kink II.—Progressive Enigma.

Kink II.—Progressive Enigma.

It is composed of seven letters. No. 1
used as a Roman numeral denotes 200; a
dash over it makes it 200,000. Letters 1
and 2 spell an exclamation meaning halt,
pay attention, etc.; 1, 2, 3 is an abbreviation of a title applied to a state or national official. 1, 2, 3, 4 is a special tool
sharpener. 1, 2, 3, 4, 5 is the plural of
the same. 1, 2, 3, 4, 5, 6 means candid
or upright. 1, 2, 3, 4, 5, 6, 7 means integrity.

Kink III.—Remnants.

Take a kitchen utensil from a hurt.

Take an animal from the back of the

Take an obstruction from a part of a

Take an obstruction from a part of a tree.

Take a sticky substance from a heavenly body.

The remnants spell what many readers of The Farmer enjoy.

Prizes for Straightening Kinks.—To the sender of each of the ten neatest correct answers to all of the above Kinks, we will give choice of a package of 50 post-cards of general interest, an Atlas of the World, or a book, "A Trip to the North Pole." Where contestant or some member of his family is not a regular subscriber a year's subscription (75c) must accompany answers. Answers must not reach us later than May 10, as correct solutions will be published in issue of May 21.

Address answers to Puzzle Dept., Michigan Farmer.

Answers to March 19 Kinks.

Answers to March 19 Kinks.

Kink I.—Rhyme Rebus.—(1), Dan, Van, Chan or any boy's name that will rhyme with the above; (2) tan; (3) fan; (4) pan; (5) can; (6) Nan, Ann, Fan or any girl's name which rhymes with these; (7) man, (8) Dan; (9) ban; (10) ran,

Kink II.—Tree Knots.—1. Trunk, 2. Bark, 3, Buds. 4, Leaves. 5, (T) wig. 6, Bough (bow), 7, Branches. 8, Roots. 9, Gum. 10, Sap.

Kink III.—Four-letter Square.

Kink III.—Four-letter Square. B A C K
A C R E C R O P K E P T

March 19 Prize Winners. Prize winners.

Prizes for correct solutions are awarded to the following: Grace L. Guyer, Harold R. Cole, Louise Bryant, Lottie Kelch, Louie B. Taylor, Elon H. Moore, Joseph Harvey, Mrs. Belle Mull, Mildred M. North and Mrs. Stella Jameson.

BOOK NOTICES.

Richard of Jamestown. By James Otis.

Richard of Jamestown. By James Otis. Richard of Jamestown is a boy every other boy—and girl, too—will find straightforward and entertaining. He more of the first of the straightforward and entertaining. He more of the first of the straightforward and entertaining. He more of the first of the straightforward and entertaining. He more of the first of the straightforward and entertaining. He more of the more of Blooks on the common coal and the more of the more

The proper shoes for men: shoes that look, fit, feel and wear right. Made of selected leather—leather that is best by every test. Correct in style. Made by the finest shoe makers, in the best equipped factory in existence.

MAYER HONORBILT

shoes are "built on honor"—built for combined style and service-built for absolute satisfaction and lasting comfort. Biggest values you can ever hope to get for the money. COLORADA

There is an Honorbilt style that will exactly suit you and fit you. Ask your shoe dealer; if he hasn't it, write us. Look for the Mayer Trade Mark on the sole.

FREE-If you will send us the name of a dealer who does not handle Mayer Honorbilt Shoes, we will send you free, postpaid, a hand-some picture, size 15x20, of George Washington.

We also make Leading Lady Shoes, Martha Washington Comfort Shoes, Yerma Cushion Shoes, Special Merit School Shoes and Work Shoes.



F. MAYER BOOT & SHOE CO. MILWAUKEE

Shetland Pony, Cart, Harness, Saddle & Bridle, Free.



the Pony, Cart and Harness. The Saddle Appeared in a Previous

Although the Pony Contest opened on March 12th and ends on April 30th, there is still time to start out NOW and win this Outfit. We are disappointed at the lack of interest shown so far in the Contest and some boy or girl who is willing to get out and hustle between now and April 30th is going to be the owner of "Beauty" and the Outfit, which is valued at \$300.00.

may win the Outfit. It will go to the boy or girl who has the most points to their credit on April 30th, if it is only 25.

CASH OR PREMIUMS

will be given all contestants, so if you do not come first in the Contest you are sure to get a very nice premium for your work according to the number of points secured, or we will pay you in Cash, just as you prefer. First list of premiums appeared in our March 26 issue. Second list appeared in last week's issue. Will send these papers to you if you wish them.

If you are not already a Contestant and you want to know how you can be-come the owner of "Beauty" and the Outfit,

See what our editor says in regard to the Contest on page 435.

Cut out and sign this Coupon or copy on a Postal Card and Mail Today. ny Contest Editor, Care of the Michigan Farmer, Detroit Mich.

Please send me Certificate of Entry and pictures of "Beauty". I haven't any Shetland Pony and want to own "Beauty".

	T. D.
	있다. 스토트 (1997년 1997년 1997년 1997년 - 1997년
PA	COT A TOTAL

WOMAN AND HER NEEDS

WHO WOULD BE A SOCIETY QUEEN?

Two Pounds of False Hair and a Wire Turban the Penalty.

little feeling that fate was unkind to me covered with beautifully Marcelled hair, thoughtful conversation. A good many could be a different sort of queen, 3. Then comes the coronet braid, the big-beration of its own sound "Lady Bountiful" and "Madame Butter- ger and braiderier the better. This is perhaps a feeling of relief. fly" combined, as it were.

But this year I believe I am cured, and it is all on account of the hair. When I look at the "coy-furies," as one woman calls the coiffures, on the streets, and reflect that if I were a society queen I should have to wear a pound or two of some other woman's hair on my aching head, I am quite resigned to the fact that I can never shine in the smart set. And then, I couldn't even comb my hair again, for the real up-to-date woman always dresses her hair now, she never combs it. Just think of it, you women who only have time to snatch a comb and yank it through your tresses three or four times while the men are putting out the horses! If you were a society queen you couldn't do that, you would have to spend at least one hour, possibly two, having your hair "dressed" by somebody else.

I was very much interested in learning what the real smart woman has to wear on her head if she wishes to continue to You see, when the coronet braids came in, I thought we were going back to sweet simplicity; just a modest part in the middle, and the long braid wound round the head, coronet fashion. I was happy, and thought maybe I could comb my hair, I mean dress it, a la coronet braid, and be in style myself. But alas and alack, a look at the real stylish heads filled me with gloom. They were hairier and puffier than ever, and I could not figure out how they did it.

But I have found out. A friend of mine who has money enough to at least ask questions in a fashionable hair shop where I could only stand outside and flatten my nose on the window pane, ventured in one day, priced some braids, and casually, though fearsomely, asked the Madame how they did it. Blessed be friendship, she passed her knowledge on to me, and this is the way to dress your hair if you will be smart.

your pompadour of hair, and this must be built up by a rat of real hair matching your own in color and texture. No Chinamen's pigtails, nor seaweed nor excelsior rats need apply. You comb your hair down over your face, adjust the rat, comb your hair back over it in an amazing sort of puff and wind up the few ends of hair that are left in a little knot. If you are a society queen those ends are indeed few and straggling, for you have snarled them and Marcelled them into almost

After your pompadour is nicely ar-

USED to think I should like to be a ranged, you next struggle into a turban. society queen. Indeed, I thought so This has a wire cap, which fits the crown thoughtful repose. We hear yards of nerfor a great many years and had a of the head, for a foundation and it is vous, high-keyed talk to inches of quiet, tion? Hours, days, yes, almost lives are because I had to work while other women matching your own. It fits into the can talk who cannot converse. Talking is failures, follies and foibles of humanity, Even five years' experience as space on the crown left rather bare after one-sided; conversation is the exchange of while the heart of nature and the lives society reporter for a daily paper didn't the adjustment of the rat, which, of thoughts and opinions. Conversation is cure me, though I lost a great deal of my course, goes all the way round. It costs somewhat of a lost art, and needs to be beauty and nobility, to one who searches 'queens.' You see, I always thought I atelle.

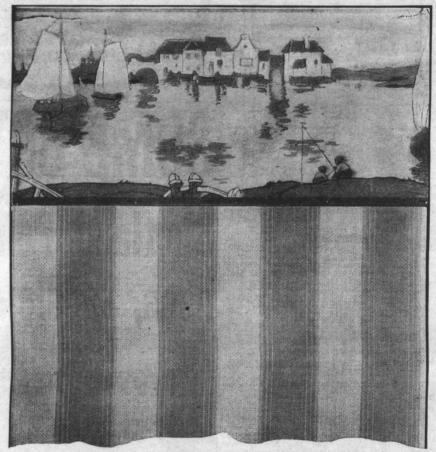
Conversation is of those about us reveal miracles of reverential respect for some of the at least \$8.00, but that is a mere bagcultivated. Talking will fill up consider- for them, that might well be the subject
able time, but it leaves only the rever- of admiring comment and

wound round the head, covering the rat

surroundings but upon the will of the in- no doubt it will come out all right. ceedings while putting things away for the night.

Then comes the coronet braid, the big- beration of its own sound behind, and opinion.

A neighbor drops in for a little while



One of the Season's Wali Papers which Could be Used with Good Effect in a Large Room-A Typical Dutch Landscape is Shown in the Frieze.

in the back, and just leaving a fringe of in the morning: "Say, isn't this horrid showing over the forehead. Twenty weather? It just gives me the blues. riguer.

DEBORAH.

In the first place, you must still wear dollars and upwards for the brail, de- Speaking of blues, you ought to have seen pending on the color of your hair and the my new white waist when it came from trouble Madame has in matching it. the laundry! It was a bright blue, and Lastly, if you are really ultra you pin on not stretching it a bit. I called them a bunch of two or three dangling little right up and they said to send it back and curls back of each ear, and there you are, they would bleach it out, but I wanted a triumph of the hair dresser's art, and to wear it to the Bijou this afternoon and a monument to the idiocy of women. The so I did it over myself and what do you only real hair that shows is the fringe think? I scorched it so that it is not fit above your forehead, but you have the to be seen. I was trying to bake bread supreme satisfaction of being strictly de at the same time and my irons got too hot. Say, I was hot this morning. I or-Who wants to be a society queen, any-dered some New Orleans molasses from the grocery, and they sent me corn syrup. I sent it right back and gave the delivery boy a piece of my mind, but I don't supto get him to hang up his cap when he comes in, but he forgets all I say in two ever he has on, the first thing he comes Monday morning; another said she often to; he is so careless. Mamie broke her took clean clothes out of their receptacle, new doll yesterday, just pure carelessness. and wet them and placed them on the It is enough to wear a woman to tatters line to be re-ironed so that her next-door work. I will be glad when they are old ing than she in this direction. These are can get out of doors and stay there. Well, maintaining it. When we do this, we over, or the children will eat up every- from the slavery of work. thing I have cooked. It is like throwing victuals down cellar to try and fill them

nected thinking on any subject, and think- of that, but I can readily see the ading precedes definite, directed action, vantage. Thank you, I will try again Meditation is not dependent upon ones and follow your directions carefully, and dividual, who can train himself to carry brought home your book. Yes, we finished on a line of thought while physically oc- reading it last evening. What do I think cupied. One can think of the trees, the saved John Barclay from himself and flowers and all that is beautiful in "God's utter failure? Well, I should place great great out-of-doors," while scrubbing floors stress on the wisdom and love of God indoors; one can plan the next day's pro- acting through a good mother. Yes, they need such help if any one does. Well, I must go back, the children may be need-Much of our talk lacks the element of ing my advice. Come over. Good-bye."

Which was talk and which conversa wasted in a vain recounting of the ills, of those about us reveal miracles of able time, but it leaves only the rever- of admiring comment and exchange of

> In placing such emphasis upon relaxation, I am not gainsaying the fact that a large part of our work in the home must be the oft-repeated and perhaps monotonous details of our daily life, but am rather urging upon women to give a place to and put a higher value on the inner manifestations of life-the beauty of love, friendship and companionship—and to natural phenomena-the glory of sea, earth and sky. Did you ever sit out in the gathering twilight and listen to the voices of night as they begin their songs of praise, and watch the stars as they one by one peep through the blue canopy above, until your mind and heart are filled with the thought of the wisdom and love of God? You can darn and sew better after such a feast. You may have wished to go abroad and see the canvasses of great artists, and yet night after night you let fade away into the darkness glorious scene of the setting sun, painted by the greatest artist of all time, because you are washing dishes and do not heed the call of the children to "Please come and see, mother!"

The details of the day, ,with all their vexing variety can be met and disposed of without disturbing this balance when it is once determined upon. One thing must be kept in mind in balancing our activities, and that is, that your balance is not your neighbors, and her's is not Each home has its own requirements and its own particular possibilities and its balance is found when the right emphasis is placed on each. Not only the things that must be done in one home differ from those that must be done in another, but the other things that might the latter depending upon the individuals. One soul may long for a chance to express itself in song, another in art, another in literature, and another in something else, and some time should be allowed for these activities, which not only make more capable home-makers, but help in building "more stately mansions" for each soul. Right here I might say that I think we place too much stress upon what our neighbors see in our homes, and not enough upon what they feel; for instance, it causes us greater concern to have a friend drop in and find dust on the furniture than it does to have him feel the strain of over-wrought nerves and cross-grained emotions, which we unconsciously display, and which are the direct result of unbalanced activities. The spirit of ambition, the desire to outdo some one else in the things that pose it will do any good, it never does at show, often leads us to break in upon home. I have been at Johnnie for a year our own balance of time and work. I have heard of a woman who began her washing on Sunday so as to be the first minutes, and down goes his cap or what- in the neighborhood to hang up clothes on

The sweetest song of the birds is their morning carol of praise before they begin the sterner duties of the day-building Another neighbor comes in, "Good their nests and feeding their young-and morning, yes, we are well. Isn't the air I sincerely think that many days of hard, ing valentines. I helped them get started and be robbed of its dull monotony if a temperature until light? You warm the ever of truth and beauty was available, are also told that women must have busi- A meditative mood is necessary to con- flour, do you? I would never have thought and the heart tuned to respond to every

A PLEA for REFORM and MEDITATION

The Busy Housewife Must Learn to Drop Work for Rest.

Life is activity. This does not mean ness ability, adaptability, versatility, etc., and poise, a balance of activities.

mable value when rightly applied. We little while.

that a whirligig beetle is more alive than if she runs the machinery of the home. a snail, nor that a noisy, pretentious per- But relaxation, meditation and conversason is living more keenly than a quiet, tion are rarely mentioned as of any parunpretentious one; on the other hand, en- ticular value in the life of a home-maker, to bring up two children and do her own neighbor would not make a bigger showtire absence of activity sooner or later or of the home. Here, our education is tree absence of activity soulier of the soulier of of the mind or heart. Neither is it all of they were found with empty, folded hands, life to live. There should be a purpose nerves and muscles relaxed, thinking, in I must be going home and get dinner rule our own province and free ourselves the midst of a busy day's work. Considerable attention is now paid in often hear women explaining their method our homes to supplying the different of overcoming—for the sake of a few minmembers composing our household with a utes much needed rest-the born and up. Come over." variety and balance of food elements— bred-in habit of tenseness, sitting-on the-proteid, carbohydrates and fats—in the edge-of-the-charitiveness. Such relaxaright proportion, and served in palatable tion should require no great effort, nor and pleasing form. This is making pro- should it call forth an apology but should fine this morning? The children are mak- prosaic labor may be made more effective gress in the right direction. We are also rather be one of the habitual activities being taught the value of sanitation, ven- of each day. Relaxation is not a cessa- and then came over to ask you how you few minutes of the early morning were tilation, sterilization, ornamentation, aera- tion of activity, but a shifting of the load, make salt rising bread. Mr. A. is so fond spent in getting inspiration or giving tion, etc., as related to different phases the muscles and nerves rest while the of it when home-made. Yes, I under vent to some pent-up emotion. I would of home life, all of which are of inestiment thinks and the heart feels for a stand. And you keep them at an even have the senses trained to take in what-

chord of pure emotion. Then we could TUNICS AND LOW NECKS FEATURES say with Browning, "Nor soul helps flesh more now, than flesh helps soul."

MRS. E. E. BOGUE.

OATMEAL SHOULD BE THOROUGHLY COOKED. No. 11.

BY MRS. ALTA L. LITTELL.

EFORE the days of prepared breakfast foods, oatmeal porridge formed the staple breakfast cereal in countless American homes. Haste, the American demon, demanded a quicker meal than could be prepared if we waited for porridge to cook properly, so predigested foods, flakes of all sorts, corn, wheat and oats, were poured on the market, and the days of oatmeal porridge were numbered. We find it still in some homes, and if properly prepared there is no more delicious food, though there may be those more nourishing for certain in-The nourishing property of foods depends as much upon what one is able to assimilate as upon the actual qualities of the food.

We all recall Dr. Johnson's definition of oats, "A grain which Scotchmen eat, but which Englishmen feed to their And when we consider the brawn of the Scotchmen we can readily see that oatmeal is highly nutritious for those who can digest it. It ranks first of the cereals in proteids, containing 15.6 per cent according to the department of agriculture; 7. per cent fat, 68 per cent starch, 1.9 per cent mineral matter and 7.2 per cent water. It makes an excellent food for long, hard work, especially where the person has a fine digestion and a good appetite. For students, oatmeal is a very good food.

Rolled oats of whatever brand should not be sent to the table unless well-A half hour is a short enough cooked. time, and those women who have a fireless cooker and can cook their porridge over night will do well to cook it in this

Barley is used principally by the cook in soups. Barley water is an excellent food for babies who need a starch with their milk diet. To prepare it, one tablespoonful of pearl barley is boiled with one pint of water for two hours, water being added from time to time to make the finished product measure just one pint. If cooked in a double boiler, cook for three hours. Great care should be exercised in beginning the use of any starch water for babies and but half a teaspoonful to every second or third bottle of milk should be given at first.

Barley contains 9.3 per cent protein, one per cent fat, 77.6 per cent starch, 1.3 per cent mineral matter and 10.3 per cent

In the character of its gluten, rye resembles wheat more closely than any of the other cereals, and so is a botter grain for bread than oats or barley. The gluten of oats is too soft for good bread making. Rye bread, while it is dark and heavy, is a very popular bread with many people. It contains 7.1 per cent gluten, or protein nine-tenths of one per cent fat, 78.5 per cent starch, eight-tenths of one per cent mineral matter and 12.7 per cent water.

The value of maize, Indian corn, as a food, seems to depend upon whether an English or an American writer is considering it, the former classing it as of little value, while Americans find it a valuable food. Corn is rich in fat, and while it is considered a good food for cold climates, has curiously enough, been used more in the south of the United States than in

Those Americans who are fond of tender, young, green corn, of hominy and below these bands. I "hoe-cake" will still stick to their own three trim the waist. belief that corn is a valuable food in spite of English writers. The government re- dresses of heavy wool are good as they port gives the following table of composi- answer for dress and coat. tion for corn meal: Protein, 8.9 per cent; plain and snugly fitting, many buttoning fat, 2.2; starch, 75.1; mineral matter, ninetenths of one per cent; water, 12.9.

questions pertaining to foods and dieting. woman. If any recipes are requested they will be

per cent solids.

OF THE SUMMER DRESSES.

If you wish to be strictly up-to-date this Delivered before the Woman's Congress at summer you must have at least one skirt with a tunic. Our mothers and big sisters called them overskirts 20 years ago, but of course they must have a new name today, so tunics they are in the stores and dressmakers' establishments. It is a good thing, perhaps, to give them a new name for they are of more becoming cut than some of the monstrosities worn two decades ago, though, again, it may have been the dead and buried bustle which gave those old skirts their fearful and wonderful look. At any rate the tunies do add to the appearance of skirts which have been so skimpy of late, and when you buy your new spring dress, by all means plan for a tunic.

The tunics are cut after many different styles, so a chance is given each woman to pick out the one which best suits her. One particularly neat tunic is on a skirt with a paneled front and back. The tunic is only over the sides of the skirt, starting at the front panel, running up over the hips in V-shape and down to the back panel. It is snugly fitting, and the skirt is pleated full below in backward lying pleats. Another tunic starts at the sides and runs up to the plaquet, while a style suited to a girlish figure goes around the skirt from front to back, not unlike a double skirt. Then there is one much like the old models, which is short in front and gom down to a deep point in the back.

These tunics are shown on the separate cloth skirts, but rarely on the skirts of suits. With suits, bands are sometimes stitched on the skirt to simulate a tunic, but the tunic itself is seldom used. Of course, they come on the pretty summer dresses of light silk, and even cotton.

The dresses this summer are in almost endless variety both as to styles and There are worsteds, silks and muslins, with short skirts or with trains; plain skirts and plain tunics and tunics draped with chiffon. This draping with chiffon is a fad of the hour which the woman with money can effect, but which the woman without plenty of it had betlet alone, as chiffon is perishable stuff. Of course, when you look in a window and see a handsome rose silk gown with the bodice and tunic draped with chiffon through which the silk glows with a softened color you wouldn't be a real woman if you didn't sigh a little long ingly to own that gown. But unless you have a good bank account, be wise. Just tell yourself that gown was meant for a woman who spends her time going to receptions and evening parties, and not for one whose chief diversion is going to church meetings and neighborhood clubs.

A cloth dress or a good substantial silk would be much more suitable for women of the latter class. Serges, shepherd's plaids, that is, the small black and white checks, diagonal cloths, foulards and Rajahs are all good. There is a decided tendency to cut-out necks with yokes of white silk, lace, net or cloth filling-in, and three-quarter sleeves with bands like the yokes, and ruffles of the cloth are good. A very sedate dress of black and white cloth shows a plain pleated skirt in a good length for walking. The bodice has two Gibson pleats over the shoulders, and a tiny yoke and standing collar of white net. Around the yoke, soutache braid is arranged in a bertha effect. The sleeves are full length, but finished at the wrist with bands of the net and a little edging

More elaborate is an old rose taffeta The skirt touches the floor all around and shows a slight train. The tunic reaches to the knees and is trimmed with buttons and soutache. The bodice has the cutaway neck with a lace yoke and collar the same lace appearing as bands at the elbows of the three-quarter length sleeves, two ruffles of silk finishing the sleeves Buttons in groups of

For early spring wear the one-piece from the throat to about a foot from the hem. A suit of this style in gray wool (Mrs. Littell will be glad to answer any is an ideal costume for the middle-aged

If any recipes are requested they will be given, but as the average housewife is plentifully supplied with them it has been thought best to omit them in most cases, unless requested.—Eds.)

Good, unadulterated cow's milk should lay them on a sheet of tin or on the bottom of a new, well-greased baking pan and bake until crisp and brown, in a very quick oven.

Haste and Waste

Stop and think for a moment the next time you are about to buy soda crackers.

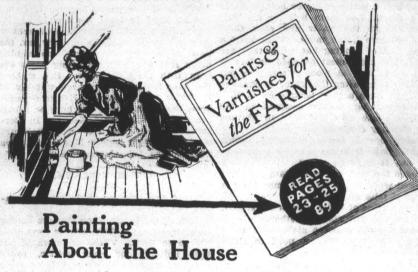
Instead of hastily buying soda crackers that go to waste because broken, soiled or soggy, buy

Uneeda **Biscuit**

in separate five-cent packages. Soda crackers in large packages soon become broken, stale and unpalatable. On the other hand, Uneeda Biscuit in handy, moisture proof packages are always fresh, clean, crisp and whole-not one wasted.

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SHORT CUTS TO HOUSEKEEPING.

This department is opened as means of exchange of new and successful ideas in homemaking. If you have learned something in cooking, sewing, child raising, fancy work, economy, anything which is helpful, and new, send it in. Twenty-five cents will be paid for every article used, but none will be returned. Keep your suggestions short.

Here are a few short cuts that I have found helpful in my housekeeping: Did you ever notice washing the kettles and pans first seems to shorten the dishwashing? Just try it once.

Don't waste the minutes when waiting for the men to come to meals. Sew the missing button on Johnnie's shirt, or mend the small hole in baby's stocking. The mending will diminish like magic and you'll have more time for the new book

Have a basket handy when going down cellar to bring up the necessary things for a meal and make one trip do the work of two or three.

A newspaper laid down by the stove in doing extra dirty work, another under the pail when emptying pans, and still another slightly dampened to wipe off the dust that collects saves mopping and washing.

You who think you must iron every stitch, try ironing towels and underclothes through the wringer while they are slightly dampened.—Reader. (Will reader please send name and address?-Eds.)

To Remove Mildew.—To remove mildew from muslin and linen. I dissolve a teaspoonful of chloride of lime in a quart of water, put in a tea kettle and let boil, then put in the linen or muslin and boil until the mildew disappears. Be very sure to rinse thoroughly, so the lime will not wet the fabric. I have always been very successful with this method .- M. A. P., Illinois.

Dried Dandelions .- One of my acquaintances has a way of "putting up" dandelion greens that is easier than any other way that I know of, and the greens are better, too. I do not know with whom the method originated but the dandelions are simply cleaned thoroughly and then dried. You can spread them out and dry them without any trouble. Put them in paper bags after they are well dried and keep them in the attic or some other dry When you want to cook them put them into a kettle and pour boiling water over them. Let them boil for an hour two or three hours more. They need a good deal of cooking but when they are done they are almost as good as freshly dug dandelions. A piece of salt pork put in with them after the water is changed will give them a good flavor.-M. C. R.

Try burning potato peelings in the kitchen range now and then to prevent the chimney clogging with soot.

bread. Bake it in tin cans with the covers on. It is just as good.

Leave the milk pail and cream cans uncovered when not in use. It improves the flavor of milk and butter.

Drop a piece of white soap in the starch. The flatiron will work smoother.

over the hot dishes.

CHOPPER.

We often sigh for the "good old days of our grandmothers," the days of "simple living," but, honestly, would you go back best, while others prefer the whip. As a to them if you could? Weren't they a compromise, the stores are offering an little too simple, especially in the matter of kitchen helps? to them and do without your "food chop- wheels which turn around and beat per," for instance, you women who have egg, a whip has been inserted which learned how handy these little machines works back and forth and the drive wheel are, and in how many ways you can use is turned. them?

All thrifty housewives like to utilize Boil one pint of cream with four ounces help in making dainty dishes of odds and strain through muslin. ing. While it is cooking put the pulverizer sugar.

through. Mix the potato with warm milk and put over the meat as a crust. Bake in the oven until the potato is browned and you have a tasty shepherd's pie.

Of course, you use your chopper for mincemeat, chow-chow, meat for hash, vegetables for salad, and bread for stuff-Or if you have not put it to this last use, do it now. Stuffing made from bread run through the chopper is far ahead of that made from bread simply broken and soaked with cold water. One enterprising woman cuts her pineapple for canning with her food chopper. Another pulverizes the cheese for macaroni with her machine, while still a third always runs codfish through the chopper before she uses it in any way either for balls or in creamed codfish. The small pieces are more eatable than the larger bits you get when it is simply torn to pieces.

If you want to give afternoon guests a treat, run a few peanuts, or almonds, through the food chopper, of course, using the pulverizer. You have a delicious nut butter to spread on thin bread for sandwiches. These, with a cup of tea or cocoa, make a lunch which should satisfy anyone. Horseradish, which our grandmothers grated with many tears loses its sting when cut with that handy food chopper; cracker crumbs are made in a moment, and some women even grind their coffee with the chopper.

In fact, there are endless ways to use it, as every woman who owns one speedily finds out. Since I have had mine the old chopping bowl and knife only come out for one thing, that is vegetables or fruit for salad. My chopper presses out too much of the juice to suit me, but this may be a fault of the individual chopper. In buying one be sure to buy the best, not the cheapest. A cheap chopper is no labor saver, as you are always stopping to right it in some way. Buy a good one, one that has a record of good work done back of it, and you will have one of the handiest tools you can own.

HOME QUERIES EXCHANGE.

Dear Editor:—Will you please inform me why the rabbit is pictured on so many Easter post cards? What is its meaning or what does it signify?—Mrs. C. E., Blissfield.

From ancient times the hare has been symbolic of the moon, because it comes out at night to feed; the female carries then change the water and cook them her young a month; both were thought to have the power of changing their sex, the new moon being masculine, the waning moon feminine, and the young hares are born with their eyes open, this making the hare like the "open-eyed watcher of the skies." The date of Easter depends upon the moon, hence the hare or rabbit became the symbol of Easter. many children are told a white hare spend hours steaming brown comes the night before Easter and lays colored eggs for good children.

IN THE KITCHEN.

If you are troubled with having potatoes and other vegetables burn fast to the bottom of the kettle when you are boiling Generate the gasoline stove with wood them, buy two or three trivets next time alcohol and you will not need to clean you go to town. These are nothing but the burners every week.—E. L. false bottoms for your kettles, round With a cloth holder fastened at each pieces of tin with little legs to keep them end of a piece of tape and slipped through up from the bottom of the dish you put your belt you can save fingers and temper them in. They are full of holes so the water gets to the bottom of the kettle. Slip them in first, then put in your vege-JUST A FEW USES FOR THE FOOD tables and if the water does boil off there is little danger of the vegetables burning until you discover the dry state of the kettle.

> Many women like the Dover eggbeater eggbeater with the turning wheel of the Would you go back Dover beater, but instead of the little

Vanilla Custard.

their leftovers, and nothing is of more of sugar for a quarter of an hour and Beat well the ends than that food chopper. Next time yolks of six eggs and pour milk over you have a few scraps of cold meat and them, placing the bowl over a pan of boila half-dozen potatoes, run the meat ing water. Stir rapidly till it thickens, through the chopper and put it on the Let it cool gradually, then add one teastove to simmer with a little water, pep-spoonful of vanilla and stir continually. per and salt, a bit of bay leaf and pars- When cold serve in a dish covered with ley or little kitchen bouquet for flavor- whipped white of eggs sifted over with

Home-Made Gas From Crushed Stone and Water

WENTY years age the oil lamp had already been driven out of the city into the country home where gas could not followthought.

In those days we would have laughed at the possibility of gas being used for lighting and cooking in a



CRUSHED STONE

country home.
But like the telephone and free mail delivery gas has finally left the city to become a common rural convenience.

In the year 1910, the up-to-date villager or farmer not only lives in a gas-lighted house same as his city cousin, but when he drives home on a cold, wet night he actually lights up his barn, his

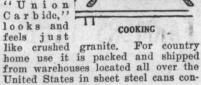
barnyard or porches on his house with this same gas light by simply pulling a little chain to the fixture.

And this change seems quite like magic when you consider that this ru-ral gas is home-made—made by the family right on the premises.

Takes fifteen minutes once a month to make all that can be used in a large house.

The magic is all in the strangely weird, manufactured stone known

commercially as "Union Carbide." This wonderful gas producing substance
"Union
Carbide," looks and



taining 100 pounds. Union Carbide won't burn, can't explode, and will keep in the original package for years in any climate. For this reason it is safer to handle and store about the premises than coal.

All that is necessary to make "Union Carbide'' give up its gas is to mix it with plain water—the gas, which is then instantly generated, is genuine Acetylene.

Acetylene makes a white light like sunlight and the gas is so pure that you might blow out the light and sleep all night in a room with the burner open without any injurious efeffects whatever.

On account of its being burned in permanent brass fixtures attached to walls and ceilings, Acetylene is much safer than smoky, smelly oil lamps, which can easily be tipped over.

For this reason the Engineers of the National Board of Insurance Under-writers called Acetylene safer than any illuminant it commonly displaces.

In addition to all these advantages, Acetylene is inexpensive.

An Acetylene light of 24-candle power costs less than the wicks, chim-neys, kerosene, etc., consumed by an oil lamp of equal volume.

As a summer fuel for light cooking Acetylene is very economical, considering the fact that it is delivered right in the cooking appliance, is controlled by a thumb screw and burns without soot, ashes or dirt.

Consider this carefuly and you will hardly wonder at the fact that there are today more than 176,000 town and country homes using home-made Acetylene for lighting and cooking.

Once a month some member of the family must dump a few pounds of Union Carbide in

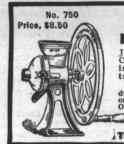
a small tank-like machine which usually sets in one corner of the basement.

This little tanklike machine is automatic does all the work -it makes no gas until the burners are lighted and stops making gas when the burners are shut off.

LIGHTING No city home can be as brilliantly or as beautifully illuminated as any one of these 176,-000 homes now using Acetylene.

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GRANGE

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Many a Clever Housewife

Has learned that to

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DETROIT WHOLESALE MARKETS.

Grains and Seeds.

Wheat.—The general improvement in weather conditions has been the great bullish factor in the wheat trade the past week and prices are generally lower, both for cash and future deals. The government report which came out during the week had little influence upon the trade in as much as the conclusion reached by the government correspondents was practically what the trade had been counting upon. The average condition of the winter wheat crop was placed at 80.8 compared with 82.2 a year ago and 87 as the average for the past ten years. In the past few days the winter wheat outlook has generally improved, an increase in the amount of spring wheat sown is apparent from reports of conditions in every section of the spring wheat belt and the cash offerings of the grain have been large. The cash situation is weak. Flour is meeting with a light demand which makes millers skeptical about loading up with wheat at present prices. One year ago the price for No. 2 red wheat was \$1.40 per bu. Quotations for the week are as follows:

No. 2 No. 1

Red. White. May. July. Thursday ...1.14¼ 1.14¼ 1.14½ 1.06¾ 5.34 turday ...1.14¼ 1.14¼ 1.14½ 1.06¾ 5.34 turday ...1.14¼ 1.12¼ 1.14½ 1.06¾ 5.34 turday ...1.14¼ 1.12¼ 1.14½ 1.06¾ 5.34 turday ...1.14¼ 1.11½ 1.11½ 1.06 turesday ...1.1½ 1.11½ 1.11½ 1.06 torn.—The average values for corn rule lower than last week; the margin, Grains and Seeds. April 13, 1910.

Wednesday .1.11½ 1.11½ 1.11¾ 1.05

Corn.—The average values for corn rule lower than last week; the margin, however, is not so broad as in the wheat trade. The demand for corn is steady. Had not the weakness occurred in the other deal it is probable that corn prices would not have been altered. The splendid weather for spring work has been a bearish feature of the trade. The heavy demand, however, has overcome this bearish feature to a very large extent. One year ago No. 3 corn was quoted at 68½c per bu. Quotations are as follows:

No. 3

	No. 3	Yellow.
Thursday	59	60
Friday	59	60
Saturday	59	60
Monday	581/2	591/2
Tuesday	59	60
Wednesday	59	60

The state of the state of																		1	2	t	а	n	ıar	G,	
Thursday	7							i,															45		
Friday																							45		
Saturday			ij										·										45		
																							45		
Tuesday				5								1					ũ			ì			45		
Wednesda	1	У	•										,										45		

Beans.—There was no call for beans, and the lack of demand has given the trade a rather weak tone. The nominal prices which are given below show a decline of one cent from the lowest of last week. These quotations are:

Cash. May.

Thursday\$2.	
Friday 2.	
Saturday 2.	.06 2.09
Monday 2.	.06 2.09
Tuesday 2	.05 2.08
Wednesday 2	.03 2.05
Oleman and miles and all and and all and	

Cloverseed.—This market continues to fluctuate, the high and low prices for prime spot being some 75c apart. October is more steady and alsike is unchanged. The demand from farming sections is not so urgent as a short time ago. Quotations for the week are as follows:

Prime Spot. Oct. Alsike.

		Prime Spot.	Oct. A	Alsike.
Thursday		\$7.75	\$6.75	\$7.00
Friday		7.75	6.60	7.00
Saturday		7.60	6.50	7.00
Monday		7.10	6.50	7.00
Tuesday		7.00	6.50	7.00
Wednesday		7.00	6.50	7.00
D M	14	Aut and stee	Acc mile	

Rye.—Market dull and steady. The new crop is looking well, the national report giving the condition as 92.3 as compared with a ten-year average of 89.5. No. 1 is quoted at 79½c per bu., which is ½c below last week's quotation.

Visible Supply of Grain.

								7	1	h	i	S	V	V	ee	e k			L	as	st	'n	W'	ee	k	ċ
Wheat										. 5	29	9,	2	1	1,	0	00)		29).	0	04	.0	0	0
Corn											13	3,	4	4	4,	0	00)		13	3.	77	74	.0	0	0
Oats										,	10	ĺ,	0	4	8.	0	00)),	91	15	.0	0	0
Rye .								è								6	07	•			V)	68	36	,0	00	0
Barley											3	3,	0	7	9,	00	00	1		2	,	98	0	,0	00	0

values given a week ago. Quotations follows: Clear	the
Clear \$ Straight \$ Patent Michigan Ordinary Patent Hay and Straw.—Last week's pri	a
Straight Patent Michigan Ordinary Patent Hay and Straw.—Last week's pr	5.30
Patent MichiganOrdinary PatentHay and Straw.—Last week's pri	5.80
Hay and Straw.—Last week's pri	6.15
Hay and Straw.—Last week's pri	
	ces
prevail: Quotations are: No. 1 t	im-
othy, new, \$18; No. 2 timothy, \$17; clos	er,

ders, 15c; smoked hams, 18½c; picnic hams, 14c.

Hides.—No. 1 cured, 11c; No. 2 cured, 10c; No. 1 green bulls, 8c; No. 1 green calf, 14c; No. 2 green calf, 13c; No. 1 cured calf, 15c; No. 2 cured calf, 14c; No. 2 green calf, 13c; No. 1 cured calf, 15c; No. 2 cured calf, 14c; No. 1 horsehides, \$3.50; No. 2 horsehides, \$2.50; sheepskins, as to wool, 50c@\$2.

Dairy and Poultry Products.

Butter.—Prices in Detroit and other large butter centers are steady with the prices of a week ago. The receipts are increasing slightly but not sufficient to crowd the trade. Extra creamery butter is quoted at 31c per lb.; do. first, 30c; dairy, 21c; packing stock, 20c.

Eggs.—There is no change in price. Receipts are large, but packers are very active buyers and prevent the accumulation of supplies by taking the offerings as fast as they come. Fresh receipts, cases included, are quoted at 21c per doz. Poultry.—There is a brisk demand for chickens. The supply is small and prices are advanced for some grades over last week. Quotations are as follows: Live.—Spring chickens, 17½@18c; hens, 17½@18c; old roosters and stags, 12@13c; ducks 16@17c; geese, 13@14c; turkeys, 17@18c. Cheese.—Michigan, late made, 15@15½c; Michigan, fall made, 16½@17c; York state, 18½c; limburger, Wisconsin, 18c, New York, 19c; bricks, 18¼@19c; Swiss, domestic block, 20c; Swiss loaf, 21@23c.

Calves.—Lower. Choice to fancy, 11c; ordinary, 10@10½c.

Fruits and Vegetables.

ordinary, 10@101/2c.

Fruits and Vegetables.

Fruits and Vegetables.

Apples.—Market steady and unchanged.
Spy, \$4@4.50; Baldwin, \$3.50@4; Steel red,
\$5; Greening, \$4@4.50 per bbl.
Onion Sets.—Tops, 75c@\$1; white, \$1.75
@2; yellow, \$1@1.25 per bu.
Onions.—Domestic, 80@85c per bu;
Spanish, \$1.90 per crate.
Cabbage.—\$1.75@2 per bbl.
Vegetables.—Beets, 60c per bu; brussels
sprouts, 25c per qt; carrots, 50c per bu;
cauliflower, \$2.25@2.50 per bu; celery, 45
@50c per doz; eggplant, \$2@2.50 doz;
green onions, 15c per doz; lettuce, hothouse, \$1.50@1.75 per doz; mint, 25c per
doz; parsley, 25@30 per doz; radishes,
25@30c doz; spinach, 90c hamper; turnips,
50c per bu; watercress, 40c per doz; wax
beans, \$4.50 per bu; pleplant, 35c per doz.

OTHER MARKETS.

Grand Rapids.

Grand Rapids.

Wheat is off 4c, and other grains are 2c lower this week, quotations being as follows: Wheat, \$1.07; corn, 59c; oats. 44c; rye, 70c. White beans are also off 5c, with quotations on a \$1.75 basis for machine screened, and with red kidneys at \$2.60. The live poultry market is steady at the following prices for stock delivered here: Fowls and chickens, 15c; old cocks, 10c; turkeys, 16c; ducks, 15c; geese, 8c. No change is made in egg quotations, these standing at 19@20c, but indications point to lower prices. Dairy butter is worth 25c, 1c higher than last week. Creamery butter unchanged at 30c, Dressed hogs are steady at 12@12½c.

New York.

Butter.—Market firm and active at Ic higher for creamery. Western factory firsts, 22@23c; creamery specials, 33c. Eggs.—Market strong at last week's prices. Western prime quoted at 23½c

per dozen.

Poultry.—Dressed, dull, with prices on a par with those of a week ago. Western fowls, 15@18½c; turkeys, 17@23c.

Wheat.—No. 2 red, \$1.14%; May, \$1.11%; July, \$1.04%. Corn.—No. 3, 56½@57c; May, 58%c; July, 61%c. Oats.—No. 3 white, 58@59c; May, 42%c;

\$1.11%; July, \$1.04%.
Corn.—No. 3, 56½@57c; May, 58%c; July, 61½c.
Oats.—No. 3 white, 58@59c; May, 42%c; July, 40½c.
Butter.—Market ruling about steady with last week in both creamery and dairy grades. Quotations are: Creameries, 26@31c; dairles, 22@28c.
Eggs.—Values are lower. Offerings are heavy and market active. Prime firsts, 21c; firsts, 20c; at mark, cases included, 18@20c per doz.
Hay and Straw.—Market is weak. Quotations are: Choice timothy, \$17@18; No. 1 timothy, \$15.50@16.50; No. 2 do and No. 1 mixed, \$14@15; No. 3 do and No. 2 mixed, \$9@13; rye straw, \$8@9; oat straw, \$6@7; wheat straw, \$6@6.50.
Potatoes.—Values are on a par with a week ago, fancy and choice stock selling at 26@25c per bu.
Beans.—Market is quiet and steady. Choice hand-picked are quoted at \$2.13@2.14; fair to good, \$2.10; red kidneys, \$2.75@3.10 per bu.
Wool.—Prices are maintained and trade here is firm.

here is firm.

Boston.

This week. Last week.
Wheat .29,211,000 29,004,000
Corn .13,444,000 13,774,000
Rye .607 686,000
Barley .3,079,000 2,990,000
Flour, Feed, Provisions, Etc.
Flour,—Flour market is steady with the values given a week ago. Quotations as follows:
Clear .53.00
Patent Michigan .5.5.90
Ordinary Patent .5.95
Hay and Straw.—Last week's prices prevail: Quotations are: No. 1 timothy, new, \$12; ner ton.
Feed.—Prices are steady on last week's basis. Carlot prices on track: Bran, \$27; per ton.
Potatoes.—No change in conditions of this deal and sellers have no encouragement as supplies are liberal and demand only fair. Michigan grown are selling in car lots at 25@30c per bu.
Provisions.—Family pork, \$28@29.50; shoul
This week. Last week's prices week called out manufacturers who immediately put in bids for supplies, there-week called out manufacturers who immediately put in bids for supplies, there-week week. Western advices indicate for the week. Western advices indicate for the week. Western advices indicate for the week argo ad buyers appear to be of a disposition to waitye their former declarations that they would not pay what was being asked. Quotations for the week are as follows: Ohio and Pennsylvania fleeces—No. 1 washed. 39@40c; delaine washed. 37c; XX, 34@35c; fine unmerchantable, 28@29c; half blood combing, 33@34@35c; quarter blood combing, 33@36c; delaine unwashed. 28c; fine unwashed. 2

THE LIVE STOCK MARKETS.

Buffalo.

(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of sale stock here today as follows: Cattle, 100 cars; hogs, 9,600; sheep and lambs, 17,400; calves, 2,000.

Market opened active and full strong quarter higher on all best grades, in fact, the range all the way through today is from 15@25c higher. Market closed up steady, everything sold, and more cattle could have been sold.

We quote: Best 1,300 to 1,450-lb. steers, \$8,25@8.65; good 1,200 to 1,350-lb. steers, \$8,25@8.65; good 1,200 to 1,200-lb. steers, \$7,75@8.15; best 1,100 to 1,200-lb. steers, \$7,75@8.5; best 1,100 to 1,200-lb. steers, \$7,75@8.5; best 1,100 lbs., \$6.50@7; light butcher steers, \$5.75@6.25; best fat cows, \$5@6; fair to good cows, \$4,25@4,15est fat cows, \$5@6; fair to good dow, \$3.04; best fat heifers, \$6.50@7.25; good fat heifers, \$5.75@6.25; fair to good do., \$5.05.75; best feeding steers, \$5.75@6.25; medium to good do., \$5.25.05.75; stockers, all grades, \$4.50@5.50; best bulls, \$5.75@6.25; bologna bulls, \$4.50@5; best milkers and springers, \$5.5665; common to good. \$25@45.

With 60 cars of hogs on our market today, market opened up about a nickle lower than Saturday's best time. Closed weak with a good clearance. Prospects only fair.

We quote: Mixed, medium and heavy, \$10.80@10; stags as to quality, \$8.25@9.

The lamb market opened up slow, with most of the best handy wool lambs selling at \$10.15@10.20; one load \$10.25, and best clipped lambs \$9.15@9.25. The market closed firm, and about all sold. Look for strong prices balance of week, unless we get an oversupply. Sheep were in strong demand.

We quote prices as follows: Best wool lambs, \$9.15@0.20; nel load \$10.25, and best clipped lambs, \$9.50.90.75; culls, \$9.99.50; skin culls, \$6.77; clipped ewes, \$6.50@6.75; clipped yearlings, \$7.75@8.25; clipped wethers, \$7.50@7.75; clipped ewes, \$6.50@6.75; clipped yearlings, \$7.75@8.25; clipped cull sheep, \$3.36; velas, choice to extra, \$8.50@8.75; fair to good do, \$7.50@8; cull to common, \$6.50@7;

Chicago.

last month; 209 lbs a year ago; 218 lbs.; two years ago and 229 lbs. three years ago.

Cattle last week were withheld by stock if eeders to a rather general extent, a course that was natural following the recent big break in prices that followed the remarkable boom of several preceding weeks. It cannot be said that the general demand last week showed any improvement, and the recoveries in prices that were witnessed must be creditd altogether to the rarely small supplies marketed, only 10,333 head arriving Monday and only 10,332 Wednesday. It is evident that the average cattle feeder is a believer in high prices at this time and is not going to be stampeded into hurrying his cattle to market after a break in prices. He takes the stand that there is no over supply of cattle in feeding districts and that high prices will prevail for several more months at least. Beef steers sold during the past week chiefly at \$6.60@8.25, with the better class of heavy shipping cattle bringing \$8.10@8.65, while a good class of steers went at \$7.75@8. Common light steers sold at \$5.50@6.75, and medium cattle were active at \$6.80@7.70. Butcher stock was especially active and shared fully in the good upward movement, cows and heifers selling at \$4.10@7.35, canners and cutters at \$2.50@4 and bulls at \$3.50@6.65. Beef that is comparatively cheap retains its popularity, and this makes a much better outlet than usual for cattle that do not cost a high price. As is usual in the spring, calves from the dairy sections have been in large supply, and despite a good demand, prices are lower, sales ranging at \$3.50@8.40 per 100 lbs. The call for stockers and feeders was moderate, as is usual at this season, but small offerings made firm prices, stock steers going at \$4.406 and feeders at \$5.60 @6.60. Milkers and springers were fairly active at \$30.65 per head, with fancy cows salable at extremely high figures whenever offered.

Hogs were in a peculiar position last week, with meager supplies here and at

whenever offered.

Hogs were in a peculiar position last week, with meager supplies here and at Missouri River markets, while the general demand was correspondingly small. Eastern shippers operated sparingly nearly all the time, and their light purchases helped the Chicago packers to place hogs on a lower scale of prices than had been seen in several weeks. The true inwardness of the situation appeared to be a smaller consumption of fresh pork, as

well as cured meats, such as bacon and hams, resulting from their unusual dearness and the tendency of most people to eat less meat and more vegetables when the weather first turns tolerably warm. After hogs had suffered a big decline packers began taking hold freely, it being realized that when the country learned that hogs were selling at the lowest figures seen in more than four weeks, supplies were likely to be withheld for a good rally. The demand from eastern shippers became larger for light hogs than heretofore, as is apt to be the case on the advent of warm days, and these sold relatively higher than prime butcher hogs, such as local packers were buying. Sheep and lambs continued to be marketed sparingly for still another week, with much the largest "run" Monday, on which day prices suffered a further decline all along the line, the best flocks included. Packers claimed that they were well stocked up with mutton, and at first their purchases were on a very small scale, but by the middle of the week a decided reaction took place, small receipts being gobbled up quickly at sharp advances in prices. There was genuine competition between rival buyers, and fat shorn stock moved off quickly with not enough to go around most of the time. Demand was apt to be sharpest whenever the weather was colder than usual, and permanent warm weather may be expected to exert a depressing influence on the market, although fat lambs will sell well, it is thought. Wooled flocks are getting scarcer all the time and should no longer be shipped to market, sheepmen cheating themselves by not clipping their lambs before marketing.

Horses of good quality have sold as actively as ever for another week, and prices continued to rule very much higher than a year ago, with receipts not excessive, although plain and medium animals were too numerous and had to be closed out on easier terms by the middle of the week. Swift & Co. paid \$500 for a thin, gray gelding that was bred in Iowa by a Fercheron horse out of a mare of Percheron and Bri

LIVE STOCK NOTES.

Grade dairy cows have been in unusually large demand in the Chicage market this spring, and the marked scarcity of choice milkers has caused prices to advance to the highest level ever known, Many men are preparing to enter the dairy business, regarding it as a highly promising field to engage in, and most of them are bent on buying none but choice cows of the best dairy breeds. These men have been making visits to the various dairy districts in search of heifers that are one to two years old, and invariably they have found it hard to discover just the cows they want, while such animals are held at almost unheard-ef prices.—An observer stationed at the Chicago stock yards, writes in a live stock journal: "Fine, big, Shorthorn grade cows that have been milked till profit ceased and fed for a month Juring the drying-up process have been shipped daily by dozens out of the Eigin district, and these dry, fat cows have found buyers at \$100 per head. At sales held recently cows of Holstein breed, freshly calved, and really high-class producers, have sold as high as \$140 each. This is a tremendous price for a grade cow. At Wayne, some thirty-five miles from Chicago, a North Dakota buyer paid \$140 for three grade Holstein heifers not eleven months old. They were nice calves, but \$46.66 looks like a lot of coin to give up for a grade heifer not yet a year old."

Numerous buyers have been traveling through Iowa, Nebraska and southern Minnesota trying to purchase good mares to ship to Alberta and Saskatchewan, and they are reported as attending all the public auction sales and bidding high prices for the best mares. Obviously, many of the new settlers on the farm lands of the distant Canadian Northwest are determined to depend on their own efforts in the future for securing their farm horses, and it is not unlikely that many of them will become breeders of horses for the market. In Iowa country districts buyers have been free purchasers of the best mares to be found, and it is clear that wooled lots and those with short fl

THIS IS THE LAST EDITION.

In the first edition the Detroit Live Stock markets are reports of last week; all other markets are right up to date. Thursday's Detroit Live Stock markets are given in the last edition. The first edition is mailed Thursday, the last edition Friday morning. The first edition is mailed to those who care more to get the paper early than they do for Thursday's Detroit Live Stock market report. You may have any edition desired. Subscribers may change from one edition to another by dropping us a card to that effect.

DETROIT LIVE STOCK MARKETS.

Thursday's Market

April 14, 1910.

Cattle. Receipts, 1,541. Market steady with Wednesday. All grades very active at strong last week's prices. Cow stuff

Thermelay's Market.

Reccipts. 1.541. Market steady with well and the state of the

Sharp & W. sold Marx 7 steers av 773 at \$5.75, 2 do av 1,000 at \$5, 5 do av 1,024 at \$6.90.

Downing sold Thompson 3 butchers av 806 at \$5, 5 steers av 880 at \$6.50.

Lachalt sold Gerish 12 steers av 1,014 at \$6.75

Kundinger sold same 6 steers av 1,080 Same sold Kamman B. Co. 6 steers av 920 at \$7, 4 do av 700 at \$6.25.

Same Sold Rahman B. Co. 5 speers av 920 at \$7, 4 do av 700 at \$6.25.

Veal Calves.

Receipts, 1,100. Market steady at last week's opening. Best, \$8@8.25; will close lower; others, \$4@7.50; milch cows and springers steady.

Bishop, B. & H. sold Hammond, S. & Co. 3 av 145 at \$5, 11 av 125 at \$8, 5 av 120 at \$6, 19 av 125 at \$8; to Parker, W. & Co. 38 av 130 at \$8; to Rattkowsky 8 av 115 at \$6; to Sullivan P. Co. 15 av 100 at \$6.50; to Hammond, S. & Co. 9 av 140 at \$6, 16 av 135 at \$7.75; to Burnstine 35 av 130 at \$8; to Markowitz 9 av 140 at \$7.60; to Newton B. Co. 29 av 130 at \$8; to Goose 4 av 115 at \$7.25; to McGuire 6 av 150 at \$8, 5 av 125 at \$7.50; to Newton B. Co. 15 av 130 at \$7.50; to Burnstine 17 av 140 at \$7.65.

Haley & M. sold Rattkowsky 2 av 125 at \$7.50.1 weighing 120 at \$7.50, 1 weighing 30 at \$5; to Thompson 6 av 150 at \$5, 33 av 130 at \$7.50; to Nagle P. Co. 16 av 130 at \$7.50.

Cheney & H. sold Burnstine 2 av 100 at \$5, 10 av 130 at \$7.50.

Sharp sold Mich. B. Co. 7 butchers av \$7.75@\$; others, \$4@7.
686 at \$5.25.
Sharp & W. sold same 26 steers av 960 at \$6.50, 2 cows av 1,650 at \$4.75.
Weeks sold same 2 bulls av 1,165 at Thursday's prices.
\$5.25.
Weeks sold Newton B. Co. 2 steers av 910 at \$6.50, 7 do av 1,090 at \$7.
Wilson sold Bresnahan 3 cows av 1.066 at \$4. 2 bulls av 920 at \$4.75, 12 steers av 1,044 at \$6.30.

The hog trade was dull at Thursday's decline, a few of the best bringing \$10.60.
Barge of prices: Light to good butchers, \$10.50@10.60; pigs, \$10.25@10.30; light yorkers, \$10.40@10.50; stags, ½ off.

CONDUCTED BY DR. W. C. FAIR, CLEVELAND, OHIO.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same allments. If this column is watched carefully you will probably find the desired information in a reply that has been made to some one else.

the desired information in a reply that has been made to some one else.

Malignant Sore Teat.—I have a cow that met with an accident, receiving a barb wire cut, making a wound midway up teat. This occurred last summer and the wound has never healed; what I mean is, it never closed entirely. This crack makes it difficult to milk her. Kindly instruct me what to do. D. B., Grass Lake, Mich.—All things considered, I believe you had better use a milking tube and not try to bring the edges together; in order to do so it would be necessary to make a fresh wound, removing both edges, then stitching the wound together and perhaps this would prove unsuccessful on account of the tissues not uniting readily. If you do not own a miking tube The Lawrence Publishing Company can supply you. A 3½ inch tube costs, delivered, 35 cents; a 3-inch, 30 cents. Be sure and measure the teat before ordering. These instruments are delivered to you by mail, but when used should be kept perfectly clean and inserted at each milking. Either boil them for ten minutes, or dip them in a solution of carbolic; this is made by mixone ounce of acid to a quart of water.

Feeding Vegetables to Brood Mares.—Is it harmful to feed vegetables to a mare that is in foal. I have been told that it has a tendency to weaken their colts. R. H. S., Hale, Mich.—For 11 years I owned 25 brood mares at my farm and every winter every one of them was fed carrots and so far as I could tell the vegetables produced no harmful effects, but I thought was a great benefit to them. You need have no hesitation in feeding a moderate amount of any sound vegetables; however, carrots are preferable; potatoes are almost as desirable as carrots, although I believe fewer of them should be fed at a mess and not oftener than once a day. From one to four quarts daily will not harm horese—two or

| sulphate iron, gentian, ginger, fenugreek and bicarbonate soda. It is also important that you feed them nutritions feed; they may be weak on account of not being fed a balanced ration.

Workhorse Pants.—I have a 13-year-old horse that had distemper in February from which he seemed to recover; I fed him a good quality of mixed hay and grain. Since I commenced spring work, he puffs and breathes fast as if overheated, no matter how easy I work him. Please suggest a remedy. J. O'S., Gladwin, Mich.—Give I dr. Donovan's solution and ½ dr. powdered stramonium leaves at a dose in moist feed three times a day. If he has a heavy coat, clip him. Feed no clover or musty, dusty, badly cured fodder and not much bulky food.

Wart—Injured Coronet.—My 3-year-old colt has a wart on eye-lid of considerable size. I also have a 5-year-old horse that calked himself several months ago, causing an uneven growth of horn which makes the foot look badly and causes some soveness. W. G. Probester Mich.

calked himself several months ago, causing an uneven growth of horn which makes the foot look badly and causes some soreness. W. G., Rochester, Mich.,—Apply one part salicylic acid and two parts lard to wart once a day or apply acetic acid to wart only daily. About all you can do for the 5-year-old is to keep the growth of horn cut down or rasped down to the normal size of hoof. Apply oil of tar once a day.

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Secretary Wilson of the U. S. Dept. of Agriculture, after a personal inspection last October, said that central New York farm land is fully as good as Western land which sells for \$125 to \$200 per acre; here is one of the best farms in Madison County, N. Y. only one mile from village, depot, stores, schools, churches, creamery, etc., \$15 acres; 50 cow pasture; cuts 150 tons hay; big lot wood and timber; 200 fruit trees, grapes, etc., \$4 taken immediately only \$28 an acre. For picture of the splendid 25-room residence, modern barn 42x100 with sheds see page 18 'Strout's \$6 page Farm Catalogue'. It is illustrated and describes hundreds of rare bargains in money-making farms throughout sixteen states; great variety in size and price. Stock and tools included with many to settle estates quickly. Write to-day for copy of this great book of reliable information about Eastern soils, crops, markets, climate, etc. We pay buyers' carfare. E. A. Strout.

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Fortunes are being made on fertile Tennessee farms. They raise big crops of Cantaloupes, Cabbage, Tomatoes, String Beans, Green Corn, etc., also Horses, Cattle, Shep, Swine, Poultry and Eggs. Write me at once for Free Literature. I'll tell you how to set one of these splendid farms for \$5 to \$10 per acre. Act quickly H. F. Smith, Trat Egr., N.C. & St. L. Ry., Dept P., Nashville, Tenn.



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CONDUCTED BY COLON C. LILLIE.

SUMMER FORAGE FOR THE DAIRY HERD.

There are few years when we do not experience a drouth, more or less severe, at some time during the summer when the dairy herd is out to pasture. Even in the most favorable seasons the quantity and quality of pasture-grass is certain to deteriorate after the first of July.

The most practical and economical way of maintaining an adequate food supply during these dry times is to supplement the pasture with some nutritious succulent food. Many times it will prove profitable to hold over a portion of the contents of the silo to feed during the summer, rather than to grow green forage

crops to feed to the cattle.

Many supplement the pasture with a light grain ration rather than to grow succulent forage crops, but there is little profit in feeding expensive grain foods to dairy cows when the sole supply of roughage consists of a drouth-stricken pasture. No dairyman can find profit in feeding grain foods unless the cows have sufficient grass and roughage to give the proper stimulus of distension to their digestive organs.

There are a number of excellent crops that may be grown to use as supplementary foods but in actual practice I have found it better to utilize such rotation crops as corn, clover, alfalfa and oats and peas to harvest green and feed to my There is no necessity of planning an extensive system of summer forage crops when we have corn, clover and alfalfa, and oats and peas that can be harvested and fed at various times during

Ensilage.

Corn ensilage possesses numerous advantages for early forage, as it is at hand many times when it would be difficult to get spring crops available for early feed-An acre of corn will produce more succulent food in the form of ensilage than an acre of any other kind of forage. The feeding value of ensilage is so well known that it is useless to discuss its merits.

Alfalfa.

On all farms where this crop will thrive atable, nitrogeneous forage, oftentimes yielding as high as fifteen to twenty tons of green forage to the acre. All of the crop that is not fed green can be cured for hay. It may be cut at various times during the summer, until late in the fall.

Alfalfa thrives best on a warm fertile soil with loose, gravelly subsoil. A heavy clay or hard-pan subsoil is most unfav-While it thrives best on a rich soil, it sometimes does well on a poorer gravelly soil. The plants consume large quantities of water, but will not survive long in a saturated soil or one that is flooded. It will be injured if water stands production and flesh condition. on the field for any length of time.

Every dairyman who has a field should try a small patch of alfalfa. It possesses exceptional value as a soiling crop and is very suitable for hay. It requires much time and care to cure a crop for hay. If handled much the leaves drop off and if not properly cured there is danger from mold and mildew.

Common Red Clover.

At seasons of the year when available, red clover is a valuable forage crop for dairy cows, but owing to its short period of availability it is unsafe to place too much dependence upon this crop. In feeding value it ranks somewhat lower than alfalfa, although it will furnish a milk production, forming a well-balanced us and makes us money." alfalfa, there need be no feeding.

Oats and Peas.

Six tons of excellent oat and pea forage so as to prolong its season of usefulness. seed to the acre.

This mixture will also make excellent hay duction? We tremble at the comparison.

if cut at the right time and properly cured. Some advocate sowing the peas week earlier than the oats. This plan would meet with my favor were it not for the fact that there are certain conditions over which we have no absolute control that many times make it impossible for us to sow the oats at the desired

Common Sweet Corn.

In many localities in close proximity to large markets and canning factories, this crop will prove profitable for a market crop and the stalks and nubbins will furnish excellent green food for the cows for a number of weeks, during the late summer and early fall. If the roasting ears do not bring a satisfactory price in the market the whole crop may be fed to the cows. Sweet corn does not make first class ensilage, but for green feeding it is superior to common field corn.

Does It Pay?

This question sooner or later comes up in all agricultural branches: Does the increased amount of milk pay the added expense required to produce and harvest these supplemental feeds?

Looked at from the standpoint of immediate profits, I would say "yes," haps about three dollars a cow from July to October-but looked at from the standpoint of maintaining the herd in a vigor ous condition, and having them in condition to do their best work during the fall and winter, I would say that it amounted to a much larger amount per cow. A milk flow allowed to go down by default can be regained until the cow again freshens

My figures are based upon feeding a herd of cows that are being milked during the whole of the year and not allowed to go dry in the fall. While my conclusions have been studied particularly from the city milk producing standpoint, yet it can readily be seen that these conclusions if right, would be fully applicable to milkproduction for any other person.

I believe that while feeding green soiling crops we should feed a little grain all of the time. No kind of forage plant that we can grow will afford the same nutriments as the short, tender pasture-grass. From my experience it is profitable to make provision for the drouth-stricken pasture, but I do not believe in growing a complicated system of catch crops when we can utilize the crops that we grow in our regular rotation. By utilizing the rotation crops there is no loss for all that is not fed green makes excellent hay and it will afford a maximum amount of pal- ensilage for winter feeding. It is poor economy to have a herd of dairy cows stamping dust from a drouth-stricken pasture in fighting flies vainly endeavoring to break through a fence which separates them from a luxuriant field of corn that is waving its prodigious wealth of forage to the breeze. It is also poor economy to keep back clover and alfalfa for hay when the cows are suffering for want of green succulent food. A more sensible view of the matter is to cut and feed these crops when they contain the greatest amount of digestible nutriments and not subject our cattle to a loss in

W. MILTON KELLY. New York.

THE SILO QUESTION.

The question that bothers the minds of many dairymen now is, "Why should I build a silo?" The placing of succulent feed before the animals the entire year keeps them in better condition and enables them to produce more milk. The increased amount of food obtained from the plant ensiloed can be counted in dollars per acre for an average crop. The large quantity of roughage stored in a small space, the cheapness of securing the crop into the silo, the larger number of cows that one is enabled to provide for, heavy yield of nitrogeneous forage, and it etc., all point to the conclusion that the is an excellent food for bone, muscle and silo should be provided, "Because it saves That inherent food for dairy cows and young growing American nature or fever or whatever it waste for what is not cut and fed green build silos if they keep cows. It is not will make excellent hay for winter a matter of moral duty, of ethics or etiquette, but a business proposition, a question of dollars and cents. Properly handled, the silo will cheapen the cost of containing more than two tons of dry production and thereby give the farmer matter can be grown on an acre. This a larger portion of the gross receipts for mixed crop should be sown early and at the milk and cream. We kick because the various intervals about one week apart, check from the creamery or cheese factory is a few cents short of expectations We have found it best to sow about equal But if the manager of the creamery or amounts of each kind of seed and using cheese factory should be kicked for what about three or four bushels of the mixed we loose from short weights or tests, what terrible infliction should we perpe-It is ready for feeding as soon as the trate upon ourselves for the money we eats are in the milk stage of their growth, let get away from us through costly proFairview, S.a., 3110,110 Any Separator Mfg. Dear Sir Will you make me the same proposition one the same proposition in regard to your separator that the Towa Separator Co. offer on theirs? If a prompt reply will be appreciated. yours trise of a prompt reply will be appreciated.

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Now, a good many dairymen have yet to learn that through the agency of the silo they will be able to produce their milk for less money. Careful farmers have learned that it is so: others will.

Wayne Co. A. H.

MORE SILO QUESTIONS.

Will ensitage keep first-class in a silo that is built next to a bank barn with say, six or eight feet built in the ground, of concrete, and 24 feet of stave on top of this wall? Silo agents claim that the ensitage below the level of the ground is not of first-class quality. Does it "wear out" a cow faster to feed her six, eight or ten months on ensitage than dry feeding winters, with pasture in the summer? Lenawee Co.

I can see no objection to putting a site.

I can see no objection to putting a sile down into the ground several feet, or, in fact, all in the ground, in the form of a pit, except that it costs so much to get the ensilage out when you want to feed The ensilage will keep in a pit if properly cemented so as to keep the water out and also the air. It involves however, an immense amount of work to get the ensilage out of a sile in the ground. You have to have a bucket and windlass to get it out which makes slow work. On the other hand, if you build your sile all above the ground, you will have to have a little more power to fill the silo. The ensilage is easily blown up there, and then when you come to feed it, it all works down hill. But so far as subscriber is concerned, where he wants to build a silo into a bank on a level with his basement, that would be perfectly proper. My first silo was built in the same way and it works entirely satisfactory. I think the size, 14 feet in diameter and 30 feet high, will answer very well. Then later on if you want a larger sile capacity, you can make the sile higher It will be all right to build the sile just above the ground with cement wall or cement blocks and put the staves on top.

I do not know of any silos being dis-

carded throughout the state at the present time. Undoubtedly there is a sile now and then that is not in use because either the man has died, or sold his farm and gone away, or he has given up stock growing and consequently has no use for the silo. This occurs sometimes. I happen to know of two silos that are no longer in use simply because the men no longer keep live stock, but get their income from other kinds of farming. But the man who keeps live stock, either cattle or sheep, dairy cows or fattening steers, cannot afford to be without a silo. There is nothing in the idea that silage will injure cattle and that they will not live as long. Silage is a perfectly healthy food and cattle do well upon it.

GROWING SOY BEANS WITH CORN FOR SILAGE.

Would it be practical and profitable to plant soy beans between the corn hills planted two feet apart? The idea being planted two feet apart? The idea being to get a larger tonnage and a better quality of ensilage. Or could you suggest something else instead for the purpose? How many seeds should be used to the hill, and when should they be planted? Would, you give preference to Canada field peas to be sown with oats for grain than snother variety of field peas? (not called Canadian). What kind would you sow?

ov:
Ottawa Co.
In theory, it would be a good thing to raise soy beans or cowpeas with the corn for corn silage so as to get a food richer in protein; but in practice it does not work out well because it is practically impossible to raise two crops on the same ground at the same time. Several years ago I got interested enough in this question to plant soy beans and cowpeas in corn, also velvet beans, to try and get a combination of crops which would make the ensilage richer in protein, but it was a flat failure with me. When you get a good stand of corn, these other crops cannot grow. The ground is shaded too much and they amount to nothing. My soy beans did not get over a foot high, neither did the cowpeas. The velvet beans on the outside row grew pretty well and some of them grew clear to the top of the cornstalks, but just as soon as you got a little ways into the corn field there was no velvet beans because nothing could grow, not even weeds, after the corn had got a good start.

We use Canada field peas mixed with oats to grow this crop, either as a grain ration, or to be used as hay. I do not know whether they are as good as the garden peas or not. Garden peas are never used for this purpose, largely because the seed would cost too much. Even Canada field peas this year cost enough, and it would add very much to the cost of the food if you had to buy any of the approved varieties of garden peas.



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LARGE VS. SMALL SPRAYING RIGS.

being put out this spring and it is prob-

pump to carry the liquid back into the tank at such time as the nozzles closed, or if more is pumped than the nozzles will carry. For a person with only a small acreage of apple trees and a considerable number of other smaller trees this will be found a cheaper and A large number of power spray rigs are altogether more satisfactory rig than a heavier one, I am sure. These engines able that many of them are heavier than with a pump attached can be bought for the needs of the buyers require. Without \$60 and an ordinary barrel used to carry experience, people are liable to make mis- the spray liquid, but we like the rig as takes. A large, heavy rig is all right in we have it, as the pump is in the tank large apple orchards where the trees are and carries a good agitator. For larger



The Well-equipped Spray Mixing Plant of Mr. Hutchins, and his Spraying Rig.

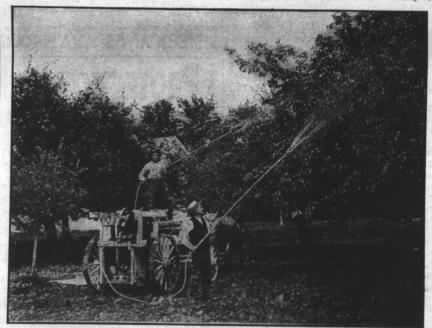
called for, and especially where the or- the heavy power machine is all right. chards are at a distance from the water supply, but with smaller trees like peaches and plums, and pears that are not large, a lighter outfit that is easier half is too heavy a load for a team to early spring.

the work of two men, one to drive the possible to cover one side of the trees stated in the Michigan Farmer a few nearly as fast as a slow-walking team weeks ago, would travel. Very short stops at each At this writing, April 1, the leaves of tree has been sufficient. This has done the trees are coming out nearly a month the work as rapidly as could have been accomplished with more than one lead of hose. The tank carries 120 gallons, and

large and not too much driving around is trees and for full grown trees in foliage

This season we are using the lime-sulphur mixture with a much smaller quantity of lime than formerly, and this is found to be a very great convenience, as for the team to haul will be found much the question of agitation is not so immore practicable. A ton to a ton and a portant. There is also little trouble with the liquid crystalizing if it happens to be haul around as much as is needed for left standing and becomes cold. We are spraying the smaller trees, particularly if using the same quantity of sulphur as the ground is muddy and soft, as is fre- before—15 pounds to 50 gallons of water, quently the case during the season of but we only put in eight pounds of lime or a little more. This makes a liquid that Heretofore it has been our practice to is nearly clear, and if left standing for a do this work with a hand pump, requiring day or so the crystals do not form to cause any trouble with the pump. Perteam and work the pump and the other haps with a poor quality of lime the case to hold the spray rod. By using what might be different. This mixture was nozzles the pump would carry it has been tried last season and found efficient, as

ahead of the usual time. Whether present warm weather is going to continue or a frost may come later and kill the fruit, this with the weight of two men is not is a question that is causing a good deal a heavy load but is heavy enough for the of apprehension on the part of fruit growteam to haul, covering the ground that ers. But the question of the safety of



An Improvised Air Compressor Sprayer that is Doing Good Service.

makes a very efficient and satisfactory than a good man, and the load is no and no perceptible injury resulted.

can be gone over. This season we have applying the lime-sulphur after growth attached a small gasoline engine to the has started is also one of chief concern pump handle and this does the work of We are just fairly commencing this work one of the men, so that one man drives and shall continue it as fast as we can the team and holds the spray rod. This make the sprayers work. I have seen this spray applied to apple trees when the outfit and maintains a higher pressure leaves were some of them out a half inch We are using four large-sized tips of a few of the leaves were singed nozzles on one lead of hose and this just but that was hardly noticeable. Care about meets the capacity of the pump and should be taken, however, about spraying enables the man to do very rapid work. with lime-sulphur after the buds are so water relief valve is attached to the far advanced that the blossom stems are

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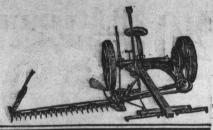
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exposed. A neighbor once sprayed som pear trees at that stage and the blossoms were destroyed.

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GARDEN QUERIES.

I have some seeds from last year that I should like to plant if they are as good, a year old; will you please tell me what seeds will hold their vitality? What varieties of peas and Lima beans shall I plant for market garden? I have a good market at a summer resort four miles away for peas, tomatoes, eggs and broilers. Lima beans sell at 30c per one-fifth bu, basket of pods.

What disposition would you make of night soil? Pails are used in closet and the object is to dispose of it as quickly as possible. I dislike to put it in compost heap—some way we have never made much out of our compost heap. We could have scavenger wagons emptied in our land but I do not know how to treat the land—believe a neighbor's vineyard, on rather poor light soil is kept up in part by night soil from town. I wonder if you can tell me how the white onlons we buy in bunches in June, are produced? We have never tried to raise onfons as our land is light, though the Egyptian (those that stand on the ground all winter) do well; we have those but they do not last. Van Buren Co.

J. J. G.
Vitality of Seeds:—While it is not possible to give an east answer as to the

Vitality of Seeds:-While it is not possible to give an eact answer as to the length of time different seeds hold their vitality, the following general rule will hold good. Beets, mangels, cabbage, cauliflower, carrot, celery, egg-plant, lettuce, onion parsley, parsnip and salsify seeds are not good after the first year; other vegetable seeds are good for two or more years; a good plan is to test the seeds of which you are in doubt.

Peas and Beans:-The subject of peas was quite fully treated of in the Michigan Farmer of March 26. To the list given there we might add Improved Stratagem, Improved Telephone and Long Island Mammoth; these are all very large podded varieties, rich, dark green color, and of splendid quality. For Lima beans we have had good returns from King of the Garden and Early Siebert, both are of excellent quality and very productive, at the price mentioned there should be good money in the crop.

The best disposition I can recommend for the night soil is to empty pails on compost heap or pile of barnyard manure, provided you pile it. Good authorities claim there is more or less danger of spreading diseases through its use in vineyards and small fruit and vegetable gardens; especially vegetables that are used raw, as lettuce, onions, etc. There could be no objection to mixing it with barnyard fertilizer and using it in corn ground or field crops, other than potatoes. We have seen very good results from plowing under garbage such as is collected in cities by drivers of garbage wagons; this was unloaded upon the ground during the winter and spring, a load in a place and just before plowing it was spread as evenly as possible. I should not advise having garbage spread on the ground during the summer; the odor would be very offensive and it would furnish breeding places for flies and other nuisances. Where one has a compost heap at some distance from the house a limited amount of the garbage could be composted with stable manure or muck. Bunching Onions:-For a crop of bunch-

ing onions this year you will have to depend upon buying sets; there are several varieties. The White Multiplier is best of all; from a single set one will frequently get ten or a dozen bulbs of excellent quality, from one to three weeks earlier than can be grown from other sets. If the White Multiplier cannot be obtained use either white, yellow or red bottom sets. Use the best soil you have and fertilize heavily; use only well rotted manure, poultry manure is good, so, too, is wood ashes but do not mix these as the ashes will release the ammonia from the poultry droppings; apply each separately and rake into the soil. Any of the high-grade commercial fertilizers may be used in place of, or in connection with, the barnyard or poultry manures. It is much cheaper to raise one's own sets and to do this, prepare ground the same as for raising large onions and sow the seed very thickly in broad drills, using about ten times as much seed as you would for a crop of large onions. If the seed is sown thin the bulbs will grow too large for sets nor will they be the right shape. Seed sown for sets may be planted later than if for a crop of large onions. The sets for bunching onions should be put out as early as the ground is in condition to work, in rows 12 to 15 inches apart with sets two inches apart in rows If the crop is not all marketed as bunching onions the bulbs may be left to mature a crop of large onions.

J. E. MORSE. Wayne Co.

Married Misery

People often rely on nature unaided to correct evil but it doesn't One aim of corrective medicine should be to do away with married unhappiness. At J the bottom of a deal of misery is found lack of cheerful yielding. Mean selfishness is as surely due to ill-health as famine is to failure. Ungovernable temper-a third fault-is largely the outcome

of stomach disorder. All these causes disappear when stomach and liver are keyed to a finely balanced tone. The first sign of on-coming Biliousness, Indigestion or Headache, should suggest old Dr. Pierce's Golden Medical Discovery. No other known medicine contains so complete a curing-power for disordered stomach and torpid liver-'Twill avert many a conflict between man and woman.

> Take pains, however, not to insist too strongly on having your own way except with the druggist—insist that he give you Dr. Pierce's Golden Medical Discovery.

Constipation is always aggravating. A costive person is hardly fit to associate with-while free and easy bowel action tends to make the grouchy grumbler a cheerful optimist, lovable and full of hope. Dr. Pierce's Pleasant Pellets, taken now and then, move bowels gently once a day. That's enough.

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ing but hay.

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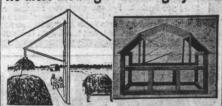
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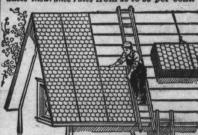
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