

## MINERALS IN LIVE STOCK FEEDING

Much has been written concerning the subject. Many advertisements appear descriptive of the virtues of commercial mineral mixtures. In a general way, it is difficult to prescribe mineral supplements for live stock. Almost as we try to prescribe plant foods in the way of fertilizers without knowing the nature of the particular soil to be fed, and in particular the chemical analysis (as disclosing the deficiencies) of same.

The kind of stock, the age, the kind and quantities of food fed, the nature and analysis of the soil growing on or a part of this feed, whether or not abnormal characteristics (deficiency diseases) appear regularly in the animals so fed, these are some of the factors concerning which knowledge is necessary before authentic information may be given. In this connection, deficiency in, say, the lime content of the plant, further reflected upon the condition of the animal consuming the plant. To a very limited extent this is true. The point is that while there is relatively little variation in the lime content of fodders, irrespective of the soil mineral content, and that the crop will lack in yield rather than constituent—the crop grown on a deficient soil tends toward the low range in the lacking soil constituent, and continuous feeding of such a fodder may ultimately reflect this deficiency on live stock consuming it.

Roughly speaking, the animal body contains the same ash materials as are found in plants, and, as a general rule, the elements essential to the life of plants are essential to the life of animals. Without going into a dissertation on the mineral composition of plants and animals, let it be stated that calcium, phosphorus, potassium, magnesium, sulphur and iron are possibly the most important elements as found in the plant and as required by the animal body. Of these, calcium and phosphorus are of prime importance, and mainly through lack of these, unsatisfactory conditions (as caused by mineral deficiency) are found in live stock.

Under ordinary conditions, as already stated, where the ration has fair variety and adequate quantities are fed, there is little danger of lack of mineral. The results of feeding ill-balanced rations, insufficiently supplied, cannot be overemphasized by feeding supplementary mineral mixtures. Correct feeding of the soil, the featuring of leguminous crops (clover and alfalfa), the following of good feeding practice and the regular supplying of common salt, all are important in this connection.

Nevertheless, the use of mineral supplements is, in many cases, good practice, particularly with dairy cattle, pigs, and pregnant or nursing females generally. With the latter a ration high in lime and phosphorus is required. Then, too, the nature of the feeds available may make necessary certain mineral additions to the ration. For example, some of the common feeds low in lime or calcium and calcium phosphate are straw and chaff, cereals and their by-products and roots. On the other hand, feeds high in lime are hay from legumes, alfalfa in particular, certain grasses and many of the leguminous seeds. The small grains, wheat bran, malt sprouts, brewers' grains, linseed meal, etc., are all high in phosphoric acid.

The following figures are significant as disclosing the calcium content on a dry matter basis of certain roughages: alfalfa, 2.5 per cent; red clover, 1.88 per cent; timothy hay, .39 per cent; corn stover, .41 per cent; oat straw, .36 per cent; wheat straw, .22 per cent.

From the foregoing brief comments, it would appear that, within certain limits, the feeder may control the mineral constituent of his live stock rations through the feeds he grows and uses.

There follows a brief discussion of mineral constituents as applying to the ration of the different classes of stock.

**Horses**—Show fewer conditions attributable to mineral deficiency than other kinds of farm stock.

1. Salt regularly.  
2. Ground or pulverized charcoal may be very useful. Feeding a handful or two during the week in grain or mash supplies phosphates and a good digestant at the same time.

3. Lime may be needed in some districts, and may be administered as ground lime stone in feed or as lime water in the drinking water.

4. Potassium iodide crystals administered at the rate of one-eighth of an ounce (one small teaspoon, level) on the first and fifteenth of each month, dissolved in drinking water, would appear highly beneficial in the case of in-foal mares as a preventive to joint ill and weakness in foals. Start administering this in November with the spring bred mare.

**Cattle**—Very frequently are insufficiently supplied with minerals, particularly high-producing dairy cows.

1. Feed a well balanced ration, making the feeding of leguminous roughages (alfalfa if possible) a feature.

2. Supply salt regularly. Iodized salt has special virtues. It may be purchased in block form or made up—two to four ounces potassium iodide dissolved in water and sprinkled over one hundred pounds of dry salt. Mix thoroughly.

3. Edible bone meal (not fertilizer) or bone char, where it may be secured, forms an excellent source of bone phosphate. Feeding a pound to a pound and a half per hundred pounds meal is good practice and may effectively supplement the heavy demands of the high-producing cow.

Where cattle show an abnormal or depraved appetite for bones, wood, etc., the result of deficient rations, this condition may be gradually corrected by the use of a mixture of bone meal, ground charcoal and salt. Further, there is considerable evidence pointing toward the probability of assistance from supplementary bone meal feeding in the matter of abortion infection control. If so, this must come through the strengthening or toning of the system generally and the genital organs in particular.

4. Pulverized charcoal or chick size charcoal may be fed to advantage, one and one-half to two pounds per hundredweight of meal. Charcoal is high in phosphates and is a good absorbent and cleanser for the intestinal tract.

5. Lime is best fed to cattle through leguminous roughages. It may be fed in the form of ground limestone with salt or mixed in the meal.

Finally, no amount of mineral mixture, bone meal, phosphates or lime, will greatly change the condition of the underfed "straw stack" cows, so common. The major consideration in Canada is better feeding, particularly as applied to calves, growing stock and dry cows.

**Sheep**—With one notable exception, sheep, as a rule, have not received or seemed to need the attention given other classes of stock in regard to mineral. Subsisting largely on pasture and hay or roughage crops and having access to the earth itself, their demands seem to be met with a plentiful and continued supply of salt, preferably rock salt.

## An Attractive Recess.

In many homes an otherwise beautiful living room, dining room or other apartment is marred by an old-fashioned shallow closet with glass doors, set into one of the walls. Usually there are drawers below, or an inclosed space, and the shelves above for the china.

Either these shelves are crammed with china in a manner that could interest no one, or else they are packed with unsightly odds and ends, and the whole concealed by curtains hung behind the glass doors. This is an unattractive sight, but a common one. A closet of this kind can, however, easily be transformed into something very lovely and strikingly distinctive, something that will enhance the interest of the entire room.

First remove the glass in the doors, if the framework of the doors is extremely narrow. But if it is wide, remove the doors and their hinges and have a narrow framework without any glass fitted around the opening. If possible have the board across the top arch-shaped.

Paint or stain this framework and all the inside of the recess, including the shelves, to match the other woodwork of the room. If all the shelves are rounded or cut into an attractive shape across the front so much the better, although they will look well if straight.

The effect thus produced is that of a shallow recess in the wall, and besides contributing an interesting, distinctive note to the room, will add slightly to its apparent size, which in many rooms is desirable.

Place on these shelves any handsome ornaments, such as bronzes or pieces of really ornamental china or glass. A decorated box would look well at the bottom. A few colorful books, not too large, standing securely between book-ends, may occupy the centre of one or two middle shelves. Almost anything will be attractive in this recess, provided one sternly resists the temptation to fill it with objects that have neither beauty nor interest. The shelves must not look cluttered. They must not be filled from end to end. Only one object, or just a few, depending on size, should stand on each shelf. This gives distinction. Of course the shelves should not have on them dollies or anything of that nature.

## The Joss Flower in Bowls.

Have you grown the Joss flower in bowls filled with pebbles and water? Interesting and so easily cultivated and flowered, it can yet be started to bloom early in midwinter. It is a species of polyanthus narcissus and is known under several popular names, such as Sacred or Good Luck Lily of China and Japan, Flower of the Gods, Water Fairy Lily. A succession of showy plants may be grown for home decoration by keeping a reserve of bulbs in a dry cool place, starting them at intervals.

The bulbs are very large and the flowers are white with a yellow cup, borne several on a stem. Each bulb produces several flower stems, the flowers being single and very fragrant.

The cultural requirements of the Joss flower are very simple and readily followed. Shallow fancy bowls are filled to within half an inch of their rims with small pebbles and a few pieces of charcoal, the latter to keep the water sweet. According to the size of the bowl, one to three or four bulbs are placed in the bowl, partly embedding their base among the pebbles. But first score the large bulb with a sharp knife, running it to a depth of a quarter of an inch across the bulb in both directions. This is to facilitate the free egress of the shoots which are dormant in the bulb.

After setting the bulb among the pebbles add sufficient water to cover the pebbles. The bowls are then placed in a dark cupboard in a cool room until growth commences, when they are removed to a light position in a room from which cold drafts are excluded. During this period a cool room best suits them, and they should be kept as near the window as possible. Fresh water must be added from time to time. When the flower stems are about six inches high they should be supported. This can be done by inserting a piece of stout wire in the bulb and securing the flower stem to it.

## Apple-Tomato Catsup.

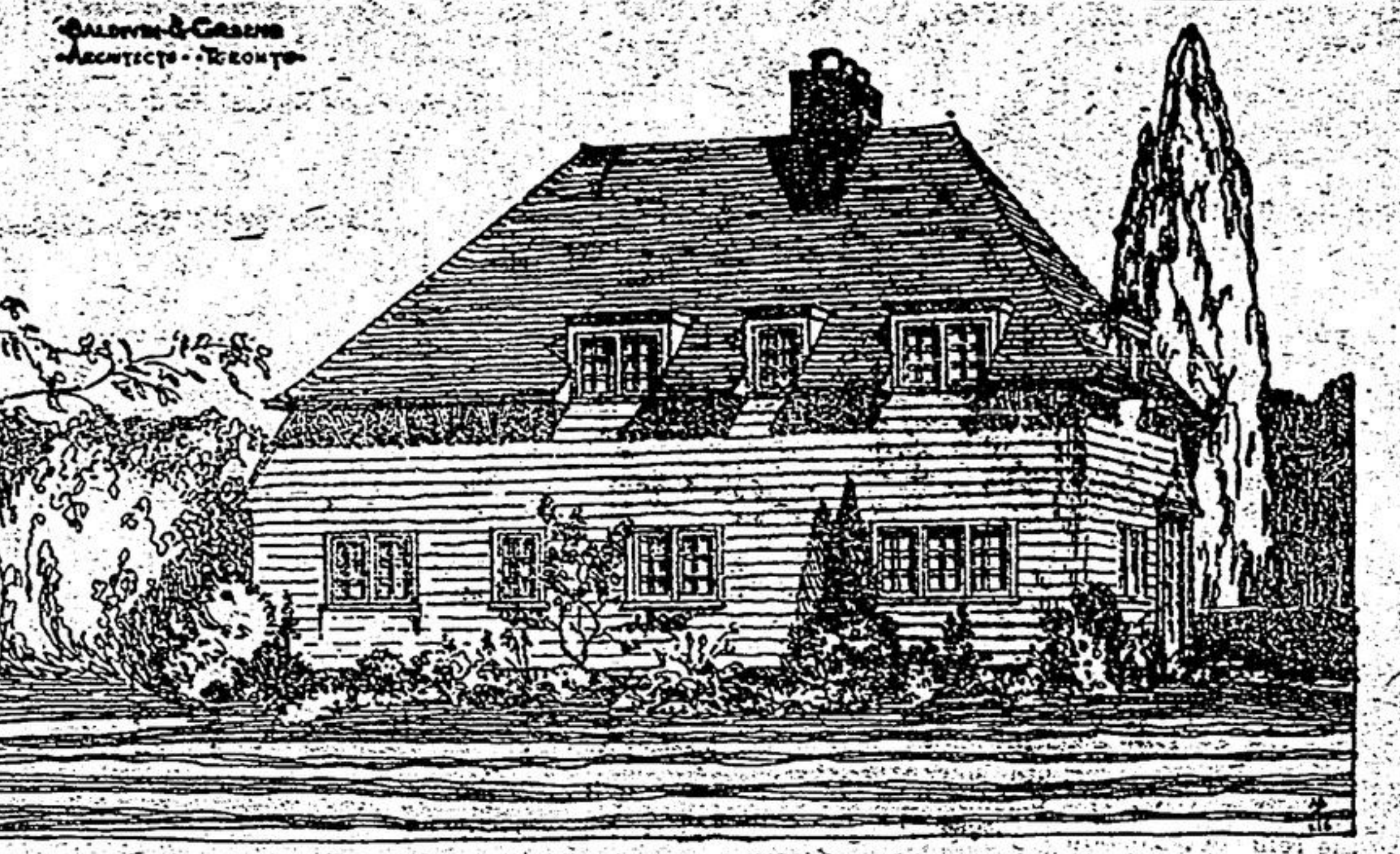
Wash and mash thoroughly a half bushel of ripe tomatoes. Put in an aluminum kettle with two tablespoons of salt. Boil until tender. Cool and mash through a sieve. Take half a gallon of the thin juice, add two pounds of sugar, one teaspoonful each of whole cloves and black pepper, six blades of mace, two sticks of cinnamon, one-half teaspoon of ginger and six medium-sized onions minced fine. Let this boil until well flavored with spices. Strain and add three quarts of sifted apple sauce and the rest of the tomato pulp. Boil until thick. Then add one quart of cider vinegar and one-half teaspoon of cayenne pepper, boil twenty minutes. Seal while scalding hot. This is ready for immediate use, but improves with age. —Mrs. G. S.

## Unkind.

Lady (in drug store)—"I want some insect powder."  
Polite Clerk—"Will you take it with you?"  
Lady—"No, I'll have the bugs call and you can give it to them."



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## DISTINCTIVE APPEARANCE AND MODERATE COST

By Baldwin & Green, Architects.

This home, 21 ft. 6 in. x 35 ft., has already been erected by a client of the architects and including hot air heating, plumbing fixtures and septic tank, cost \$5,500. The exterior walls are of lapped siding laid over tar paper and tongue and groove sheathing. The concrete cellar extends under the whole house and contains storage space for fruit and vegetables.

An interesting feature of the first floor plan is the elimination of the entrance hall, or what would be equally true, its enlargement to form a sun-room. This arrangement is far more preferable than a small hall for it really performs the same functions and at the same time is ever so much more utilitarian.

The living room is 13 ft. x 13 ft. and the light problem is well taken care of by the two groups of casement

windows. More important than the area of the windows themselves is the fact that the light from these sources is absolutely unobstructed. Roof projections for verandahs are usually the most prolific source of trouble in this respect and it is invariably the living room which suffers.

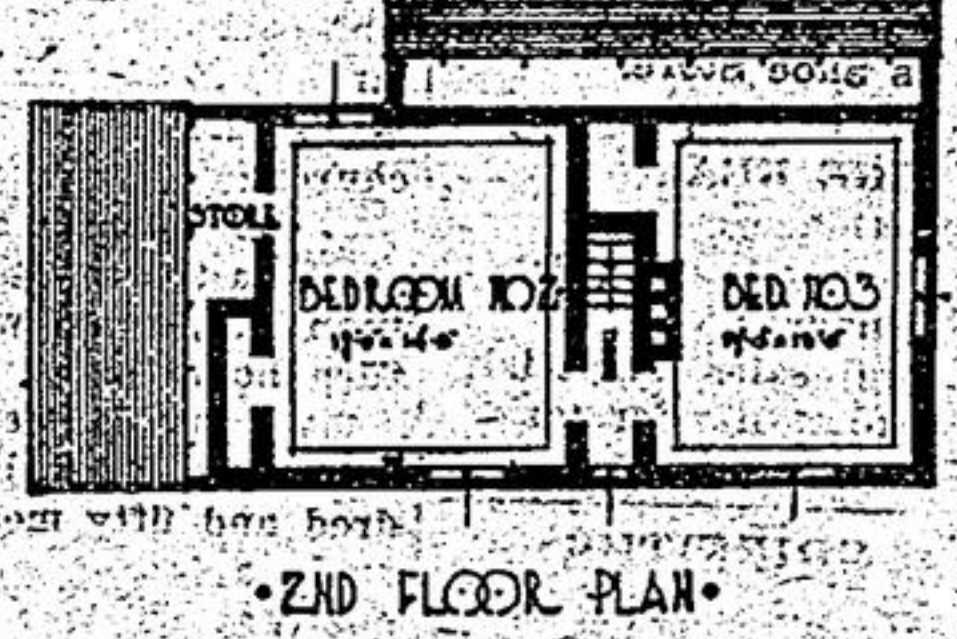
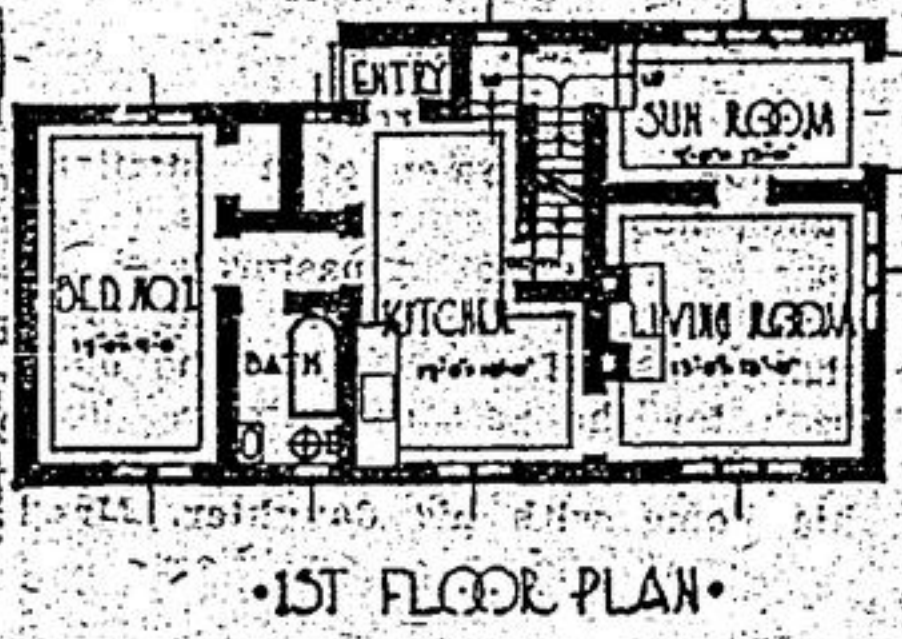
As there is no dining room, the kitchen, 17 ft. x 10 ft., is intended to serve in a dual capacity. The large cupboard just inside the door contains a built-in refrigerator with outside icing door. This, of course, in addition to facilitating icing during the summer, also precludes the necessity of it in winter.

The architect's client insisted on a bedroom and bathroom downstairs and the dimensions of the former, 17 ft. x 9 ft. 6 in., indicate that his wishes have been complied with. The other

two bedrooms upstairs are also exceedingly large, 17 ft. x 14 ft. 6 in. and 17 ft. x 13 ft. Spacious clothes closets and a store room complete the second floor plan, which could easily be altered to suit other preferences.

Readers desiring further information regarding the plans and specifications of this house should communicate with the architect direct. Address, Messrs. Baldwin & Greene, 31 Bloor St. E., Toronto, Ont.

Question. Is a one-inch air space between a tile wall and the plaster coat sufficient to eliminate dampness? —Yes. And it is desirable to have water-proof paper applied between the furring system and the tile. Some patented wall bearing tile forms are available that do not require furring.



## A County Fair Party.

The invitations were huge poster-like affairs with pictures of horses, pigs and chickens pasted upon them. They bore the news that the Hickville County Fair would meet on the following date and that no one but hicks would be admitted. All the guests arrived in costume. The home had been turned into a veritable fair-ground. Rugs had been rolled up and most of the furniture put into one room. Gay pictures and posters hung on all walls, and in every corner was a stand of some kind. Each guest was given a handful of paper money to spend.

There was a whole row of "nigger" babies made from corn-cobs. For the paltry sum of one dime you might have three throws at them; for each doll you might hit you received a stick of gum.

The house of horrors was open to any one for twenty-five cents. It was completely dark and especially gruesome. One was told to put his hands in the lake, which was full of fishes and worms. It was the bathtub partly full of water and in which floated cooked spaghetti.

One had to get down on his knees to get to the next place, and this required crawling through an old auto tire. One had to "shake hands" with the ghost, who held out a clammy hand, an old water-soaked glove.

On a counter was a small mechanical donkey, along the track were numbers. The guest choosing the number where the donkey stopped got the money.

Hooks had been placed on a small board and hung on the wall. Under the hooks were pasted numbers. For ten cents you might buy three rubber-jar rings to throw. Beautiful gum kewpies were the prizes.

Presently the lunch counter sprang into prominence. There you could buy piping hot lunches with imitation money.

The last thing of the evening was the raffling of the big motor car. This was a toy car. —Mrs. W. E. D.

## Making Sure.

The electrician was puzzled. "Hi!" he called to his assistant, "put your hand on one of those wires."  
The assistant did as he was told.  
"Feel anything?"  
"No."  
"Good!" said the electrician. "I wasn't sure which was which. Don't touch the other or you'll drop dead."

## CAN HANDS THAT WORK BE BEAUTIFUL?

BY SARA SWAIN ADAMS.

I once heard a great artist say: "Nothing you will see an improvement in one's hands are ever beautiful until they have worked with their hands." This is actually true, for a characterless hand is an ugly hand. Haven't you seen them? Haven't you seen pudgy, puffy, colorless hands?

The crudest, roughest working hand is fine to look at beside such hands! Look at your own hands.

Are they red, with rough skin and broken nails? They may look neglected, but they have a fine character of their own—and all they need is a little outside care and they will gain your admiration for their individual beauty as well as your love for their capability.

Let me talk directly to you, Mrs. Housewife, Mrs. Farmwoman, Mrs. Mother of Children? You can continue to do every physical bit of work your hands have always been doing and still give them an outward beauty.

Suppose your hands are in the very worst possible condition. Suppose they are rough and hard and red. The very first thing you must do is to help the skin of these rough hands to a normal softness and smoothness. You need a pair of large, clean, white cotton gloves. You can buy them at a trifling sum from any general store. You also need a jar of good, pure cleansing cream. Wash your hands carefully at night before retiring. Use warm water and a pure white soap. If the dirt seems ingrained, just soak your hands in the warm sudsy water for a few minutes. Then rinse them thoroughly in clear warm water and dry. Now take your cleansing cream, a little at a time until your hands and wrists are well covered.

## AFTER WASHING THE DISHES.

Work the cream well into the hands and wrists, using a similar movement to the one you use in washing your hands. Pinch the tips of your fingers and rub the nails with a rotary movement. Slide your hands down to your wrists and rub up and down as well as around.

After you have given your hands this treatment slip on the big cotton gloves and go to bed. Keep the gloves on as long as you can—all night if possible—but even if they slip off in your sleep your hands will have received their benefit and the next morn-

ing you will see an improvement in their appearance.

Of course, your hands will be a little more tender. Therefore, on the following day you should watch them a bit. Don't thrust them into hot dish-water—you can wash your dishes with warm water and soap and get them just as clean. Use all the hot water you want as your dishes stand in the drain, but keep your hands away from the ruinous effects of water that is too hot. After you have washed the dishes, rub a little cleansing cream into your hands again, wipe them off, and hold them in a pan of cool water or under the cold-water faucet to firm the skin after using the cream.

Please don't let this seem a long, tedious duty. When you make it a daily habit you will find that you do it as instinctively as you dry your hands after they have been in water.

And that's another important thing! Always dry your hands carefully. If you have your hands in water a great deal you should begin to keep a stack of soft, old towels or white cloths—cheese-cloth, old table linen, bed sheets—anything so long as it is white and clean—and absorbent well. Here is another little habit. If you begin it you will never think of giving your wet hands a little rub with the convenient apron, leaving the skin of your hands damp and susceptible to the air.

Here are a few suggestions in treating the stains you are apt to be troubled with in the average home work:

Pumice, either powdered or in cake form, will remove the fresh stains made by raring potatoes, fruits and so forth. Keep it on your kitchen sink and use as soon as possible after getting the stain.

You will find a freshly cut lemon will remove stains also, and will subdue tan and freckles. Apply at night after bathing, leave on till dry, rinse the face with cool water, then rub on a little night cream.

Mr. Booth Tarkington thinks that within fifty years the skirt as an article of women's apparel will have disappeared. Our own guess is that long before that time the skirt will be as long and perhaps as voluminous as in the days of good Queen Victoria.

## Wrestling the All-Round Sport.

Do you want to be the strongest boy in your neighborhood? Do you want to know what sport will develop your strength faster than any other? Are you interested in a sport that will give you all-round athletic ability and make you more capable in other sports than anything else you can do?

Wrestling will do these things for you. It will make every muscle in your body stronger. A boy who wrestles ten or fifteen minutes, two or three times a week for a year, will be amazed at the results.

A peculiar thing about wrestlers, I have observed in several years as a college wrestling coach, is that it makes fat boys slim and slim boys husky. Last year I had a boy who in five and a half months grew from 132 pounds to 158 pounds, and it was all muscle—an increase of twenty-six pounds of muscle. Every one of you fellows can do the same.

Training in wrestling is a wonderful aid to a boy who aspires to shine on the football field. Wrestling teaches you how to fall without getting hurt, a very important thing in football. Football also wants you to take an opponent off his feet, and wrestling is the science of doing that.

Maybe you'd like to know about one or two of the simple but effective holds. In time you can learn a score of wrestling holds, but remember this: Lay off torture holds that might result in injury to your opponent. You don't want to hurt a friend and you are not wrestling for fame or money.

The halfelson is a well-known hold in wrestling and you should know it. Here's the way to practice it: First, get to your knees, both of you, with your heads in the same direction. However, the boy you are going to

work the hold on should be about a foot ahead of you. You are on his right side. Now turn toward him so that your head is over his right ribs. Put your right hand under his right arm pit and slide it on through over the back of his neck. With your left hand reach in between his knees and grab his right knee. Now lift with both hands and you will turn him right over on his back.

Probably the best hold to take a man off his feet is the leg dive. You are standing face to face. Suddenly bring both your hands up to within a few inches of his face, and then just as suddenly change the direction of your hands, dropping them to encircle his knees and at the same time push him over backward.

## Preparing Bed and Planting Bulbs.

Hardy bulbs have the strength for their first blooming season in the bulb to a large extent and yet a good soil will increase the size of bloom and is quite important in making good bulbs for the future blooming. The soil should be sandy, and if I have heavy soil I try to get some sand, or coal ashes will serve if the cinders are out. I want a meadow soil, for that is best; and for fertilizer I use bone meal, as bulbs will not stand any manure touching them, even if rotted. If you wish to use manure it can be mixed into the soil at the bottom of the bed if covered with a couple of inches of meadow soil under the bulbs. Plant all bulbs with four times their diameter of firm soil over them. Some use sand about each bulb, but this will not be necessary unless the soil contains some manure.—A. H.

So much is a man worth as he esteems himself.—Rabelais.