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## DID YOU KNOW THAT—

Cabbages, Can Be Raised as Big as Hogsheads? Trees Can Be Made to Bear Fruit in Two Years? Plants Can Be Pollenized by Machinery? Potatoes Can Be Grown in Swamps?

The United States Government Is Doing All These to Reduce the Cost of Living.

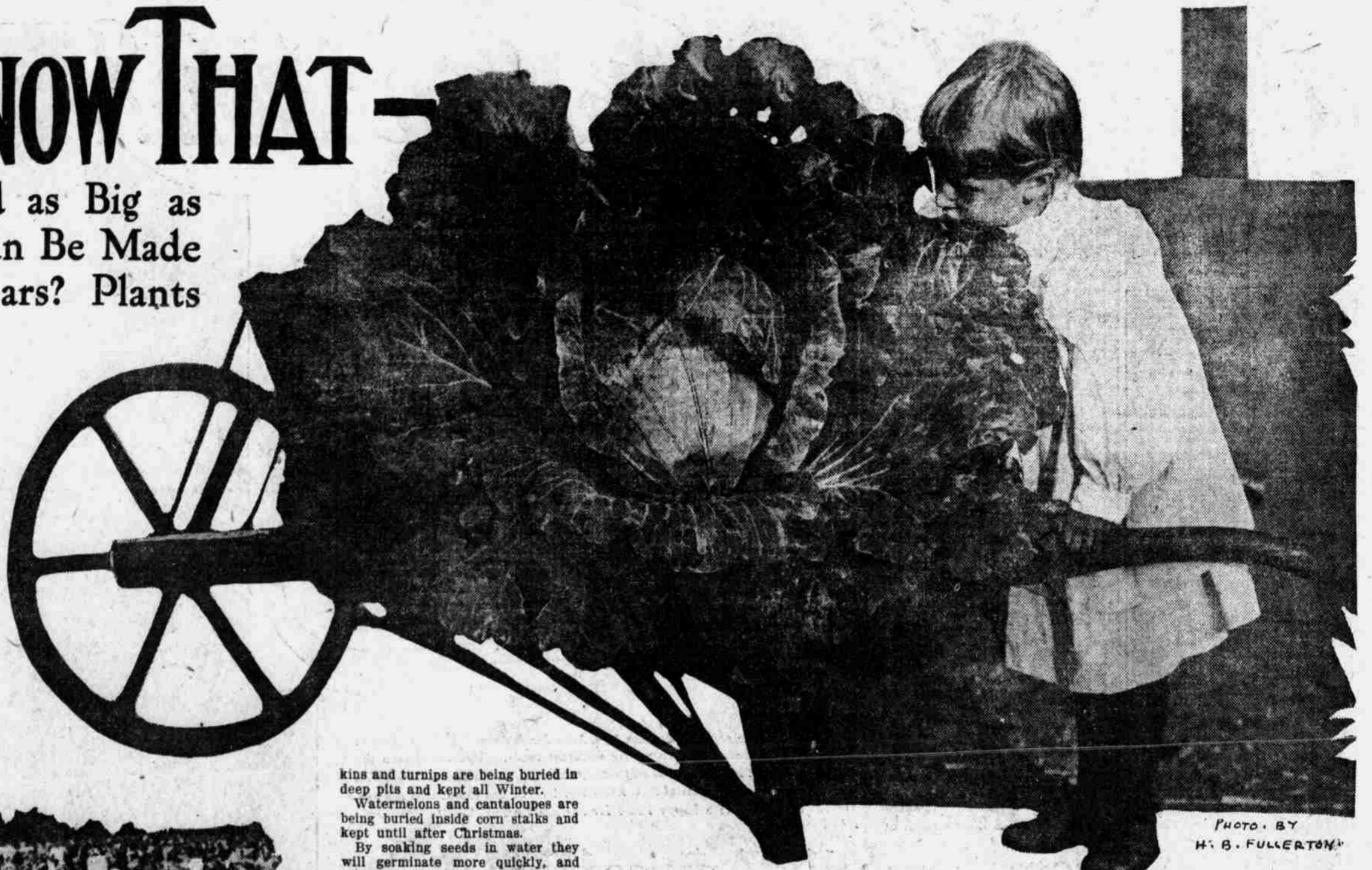


PHOTO BY H. B. FULLERTON

The Giant Cabbage Brought from China. It Is Found That It Grows as Prolifically in This Country as in Its Native Land.



Plants in Paper Bags to Prevent Cross Pollenizing to Perpetuate the Strain.

THE Agricultural Department of the United States Government is working constantly on experiments that may result, it is hoped, in reducing the cost of living. The department has already made discoveries that will, in time, not only introduce new articles of food to Americans, but will reduce the prices of many foodstuffs already on the market. Science in all its branches is being made to help the farmer, and, incidentally, the consumer. The newest and most interesting discoveries show marvellous strides in scientific farming, and we find by visiting the experimental stations that:

The department is experimenting with goats to see if these animals can be made to take the place of the expensive beef and mutton. Goats are the cleanest of all animals, they are the least expensive to feed and care for and they are eaten by the people of many countries.

Goats' milk can be produced much cheaper than cow's milk, and it is already used in large quantities in the hospitals of the country.

Directly across the Potomac from the city of Washington is an experimental farm, maintained by the Department of Agriculture, where farming novelties of no ordinary kind may be observed. One finds a one-acre vegetable garden designed to be an object lesson in intensive farming.

Twenty-eight kinds of vegetables are produced on one little patch, being planted in proper succession with the progress of the seasons, in order to keep the ground busy—the idea being to show what can be accomplished in the raising of garden truck on an acre of land when the latter is properly handled.

The Department is breeding vegetables with a view to standardizing them. In other words to establish definite forms of tomatoes, radishes, beets, potatoes, cabbages, etc., so that the same seeds will always produce the same form and size of vegetable.

Ordinary cabbages, for instance, do not yield more than fifty per cent of marketable heads during the season. One-third of a field of potatoes will frequently be lost because the seeds are not standard-

ized, and so it goes all the time with the farmer. The Department hopes to develop plants that will invariably produce 90 to 95 per cent and this will be an important factor in reducing the cost of living.

The potato, like everything else in agriculture nowadays, is being scientifically controlled. Thus, in the irrigated valleys of the West this vegetable is grown in such fashion that water is never permitted to come into contact with its leaves—irrigation "laterals" running between the rows at a depth just sufficient to moisten the roots. Potatoes raised in this way are safe from rot, and remarkably perfect, commanding an extra high price.

It is thought by the Department that profit use can be made, by crossing, of a "water potato"—so called because it grows in moist places—recently discovered along the banks of the Mercedes River, in Uruguay. One important advantage it possesses is that it replants itself, the plant being reproduced from such fragments of rootlets as are left in the ground after the tubers have been gathered. Melons, cabbages, potatoes, pump-

kins and turnips are being buried in deep pits and kept all winter. Watermelons and cantaloupes are being buried inside corn stalks and kept until after Christmas.

By soaking seeds in water they will germinate more quickly, and three crops can thus be grown where one was before.

There are many new vegetables being brought here from other countries. There is the "yautia," from Polynesia, which is closely related to the "elephant-ear" plant of our gardens. It has a large, fleshy and starchy root, and possesses the notable advantage of growing profusely in boggy land. It is, in fact, a wet-land plant, and is calculated

as udo, in Japan, is already appearing in our markets. It looks somewhat like celery, is grown like it, is delicious and should be cheap. The explorers attached to the Department have introduced a giant cabbage from China, a single head

The giant radishes, introduced from China, are now appearing in our city markets, and are pronounced far superior to the radishes we have hitherto known. From the same country comes an edible gourd, grown on trellises, which is said to be a most excellent vegetable, stewed, and most reasonable.

In the way of fruits, we shall soon come to know a new blue raspberry, which has been fetched from India; an unfamiliar and delicious citrus variety, called the "finger lime," and certain kinds of oranges, from China, with which we are wholly unacquainted.

Southern China, in the coast region, seems to be the original home of the orange, and our agricultural explorers have found there some eighty kinds of oranges which people in this country have never yet heard of and which can be grown here.

Many wonderful things are being done with plants native to American soil. Our plant breeders are developing new kinds of alfalfa, which are expected to prove of enormous value to the farmer.

A cheap and ingenious scheme has been devised to protect orchards against frost. Large paper bags are filled with shavings which have been previously soaked in crude fuel oil. These sacks are scattered at intervals among the fruit trees, on the ground, and when the temperature falls to the danger point, fire is set to them. Burning rapidly, the contents send up a dense smudge of smoke, which forms a sort of artificial cloud and acts as a blanket, preventing too rapid radiation of heat upward from the earth.

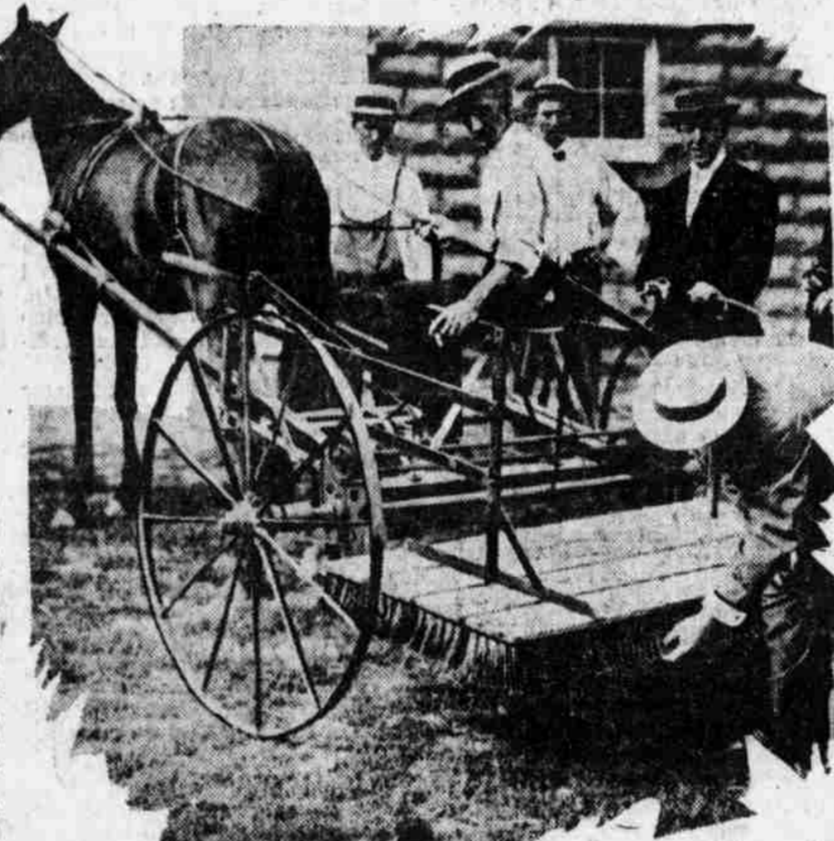
Artificial pollination will materially increase crops. A most interesting recent invention is a machine that might be called the mechanical bumble bee. Drawn by a horse over a field of clover, it carries in the rear a small platform, provided underneath with several hundred little

brushes. The platform is so arranged as to be adjusted at any height that may be desired, and the brushes, passing over the clover blossoms, distribute the pollen and accomplish the fertilization of the female blossoms.

The Department is also experimenting in food for the well to do. It has discovered things that will increase the cost of living for those who can afford luxuries.

They are growing sweet corn under glass—a thing hitherto deemed impossible. It seems, however, to be simple enough, the most important requirements being plenty of sunlight (the glass must not be shaded) and a temperature of 75 degrees or higher by day. Greenhouses similar to those used for lettuce and tomatoes, but high enough to give the stalks room, serve the purpose admirably. The thermometer is never allowed to go under 60 degrees at night. The seeds are soaked in water, to make them germinate more quickly, and the requisite pollination is accomplished by cutting a tassel here and there and dusting it upon the silks. In eighty-eight days the ears are ready to be picked, but their growth may be accelerated to some extent by supplying more heat. They are worth from \$2 to \$3 a dozen in May and June.

Another miracle of gardening, hardly dreamed of until recently, is that of producing choice cantaloupes for market all through the winter, beginning in December. The secret of it, however, is simply high temperature, with plenty of water and a very rich soil—the melons being sown in pots and transplanted later. The temperature of the greenhouse is never allowed to go below 70 degrees, and the melons are raised on the "vertical" plan, the vines being trained on wires, up and down. This saves space, and keeps the melons away from contact with the soil.



The Artificial Pollenizer, or Mechanical Bumblebee, the Newest Invention for Pollenizing Plants.

to prove highly serviceable in extensive districts of the South unavailable for any other kind of agriculture. An acre of it will furnish an astonishing quantity of wholesome and nutritious food. The new Japanese lettuce, known

of which will fill an ordinary wheelbarrow. One might expect it to be of coarse texture, owing to its huge size, but the fact is that it is far more delicate and delicious than any kind of cabbage with which we have been hitherto acquainted.

## First Aid in the Family---TO SAVE YOUR DOCTOR'S BILLS

A DISCUSSION of first aid in the family does not concern the treatment of serious injuries like drowning, overheating, sunstroke, epileptic convulsions, apoplexies, etc., but should be restricted to slight disabilities or ailments, says the Journal of the American Medical Association. It certainly is unwise, and is not advocated in this article, to encourage a layman with a small, if any, amount of medical knowledge, to treat a patient for even twenty-four hours before the physician is summoned.

If it is advisable in cities, or if it is a necessity in a small community remote from immediate medical aid, for a family to be prepared to treat simple injuries; laming; simple gastro-intestinal disturbances as vomiting, constipation or diarrhea; beginning colds of the nose, throat or bronchial tubes; or some sudden rise of temperature, it is well to outline what the family may safely use and should have in some cabinet or closet.

This family cabinet might well contain such articles as a graduate, medicine droppers, water bags, a fountain syringe, a Davidson syringe, some simple antiseptic for external use (as advised by the family physician), simple laxatives and cathartics, a pure castor oil (with instructions as to the best method of administering it), boric acid, hydrogen peroxid solution if frequently renewed, tincture of iodine in an air-tight bottle and not too long kept, some simple emetic as mustard or syrup of ipecac, some simple antiseptic, a soothing ointment (as suggested by the family physician), good whiskey or brandy, aromatic ammonia in an air-tight bottle, smelling salts, pure sodium bicarbonate, perhaps essence of peppermint, oil of

cloves for a sore gum or an aching tooth, some simple mouth wash or gargle, etc.; in other words, simple external and harmless internal drugs or preparations. The cabinet should contain several sorts and sizes of bandages and simple appliances for minor injuries. Printed instructions should describe the best "first" treatment for a burn, and picric acid should not be part of this emergency treatment. Picric acid can do a great deal of harm when misused on burns, and the exact way it should be used, and the amount, should be determined by the character of the burn and what the surgeon deems advisable. Picric acid should not be a household remedy.

The family should not have or use, without a physician's instructions to some certain person for some specific reason, any strong cardiac, narcotic or soporific drug. Some of these preparations may do harm; others are useless, and the laity should not be encouraged to have faith in a preparation or drug that is worthless. It is much better to teach them a mental science cure, or give them psychic treatment.

The following "don'ts" apply to drugs which have at times been recommended to families for use in emergency, or have become household remedies through their having been frequently ordered by physicians; it is as good a rule for the layman as for the physician never to do any harm whatever else may be done:

1. It is unjustifiable to allow a layman to use a drug like aconite in any form, especially in the form of a strong tincture of the root, to say nothing of the fact that the solution might become stronger by evaporation of alcohol if long kept, or might deteriorate in other respects. If a physician thinks that a given family should

have an aconite or cold tablet preparation, he can furnish it with his pet "rhinitis" or "cold tablets," with full instructions how they shall be taken. The only possible use to which the family could put, or should put, aconite would be in a beginning cold. No one would advise its use by a layman in a possible beginning pneumonia.

2. The same discussion under aconite will apply to gelsemium. The only excuse for a family having gelsemium would be that a member of it had recurrent pain in a nerve and gelsemium had been found to be of value. This then is not a family remedy, but a specific one for an individual.

3. A frequently used substance is sweet spirit of niter. In the first place, it more or less rapidly deteriorates, depending on the temperature and the frequency with which the bottle is opened. To be of value as sweet spirit of niter, it must be freshly prepared. When freshly prepared, this solution is neutral to litmus paper, but when long kept, especially if exposed to air and light, it acquires an acid reaction. It readily loses its nitrous ether, and then could have no action for good, even if its activity when pure and fresh is considered efficient.

While many physicians believe that sweet spirit of niter has valuable diaphoretic and diuretic activities, others believe that such action is largely a matter of hereditary belief. If pure, it certainly does no harm, and may do some good. Small doses given frequently in hot water or hot lemonade, with the patient warmly covered up or in a warm room, certainly tend to promote sweating. Whether the hot lemonade would not work as well is a question for each physician to decide. On the other hand, if it is given in larger

doses, at less frequent intervals, in ice water, with the patient in a cool room and kept cool, duresis may be caused. Whether this also has much to do with the action of the drug, or is due to the ice water and the rest of the treatment is another question for the physician to decide. Certainly, as a remedy to retain in the household cabinet it is inadvisable. It should be freshly obtained from a trustworthy druggist.

4. A much lauded preparation for use in various upset conditions of the stomach is the official mixture of rhubarb and soda. While it can do no harm, it seems unwise to recommend it for family use.

The official mixture of rhubarb and soda contains:

	gm. or c.c.	gr. iijv
Sodium bicarbonate.....	35	m xxx
Fluidextract of rhubarb.....	0.3	m vi
Fluidextract of ipecac.....	35.0	℥.3 xii
Glycerine.....	35	℥.3 xii
Spirit of peppermint.....	35	℥.3 xii
Water, enough to make.....	100.0	℥.3 iijv

This is a mixture that has for many years been largely used in most hospitals. The young doctor starts out in his individual practice with an enormous amount of faith in this disagreeable-tasting preparation. No one can question that the ingredients are valuable, and if any physician wishes to use this preparation in preference to some other gastro-intestinal treatment, nothing can be said against his decision. On the other hand, some patients are nauseated by it, largely because of the glycerin, perhaps; the rhubarb may be too active, or inefficient, and another laxative must be given; and the amount of alkali may be totally insufficient for what is desired. The scientific physician, who thinks it is as wise

to fit his prescription to his patient as it is to make scientific examinations positively to determine his diagnosis, will rarely find it advisable to use this mixture. If the patient needs a cathartic, he needs it at once. If he needs a laxative (three times a day, or more frequently, as above is generally administered), the mixture is generally unsatisfactory. As such it either does not act at all, or it causes too frequent movements. If it does not act at all and is useless, why have the disagreeable-tasting rhubarb in the preparation? The minute doses of fluidextract of ipecac, each teaspoonful or 5 c.c. containing but 0.015 gm., or about one-fourth minim, makes its addition an absurdity, and it is quite probable that most physicians who order this mixture have forgotten that it contains a fluidextract of ipecac. But why continue to use a mixture, or why require its officialization in the Pharmacopoeia, when it contains ingredients that have no activity, especially in the dose presented?

If a gastro-intestinal condition requires an alkali, it is better to give it in an amount that is of value, possibly combined with bismuth.

That glycerin is of value as a laxative and as an antiseptic, and that peppermint is a good carminative, there can be no question; but glycerin is rarely ordered except in a mixture to be taken internally, perhaps not frequently enough. Probably few physicians remember that the mixture of rhubarb and soda is really a glycerin medication.

The matter resolves itself into the following sequence of events: The patient requires some gastro-intestinal treatment. He is given a cathartic, his diet is regulated and a prescription is written for the mixture of rhubarb and soda. The patient

improves or recovers, and the physician is sure the rhubarb and soda mixture did it. As a matter of fact, it is probably the glycerin, or at least the treatment did him no harm. In other words, it is the prescription plus faith and glycerin.

This digression in the discussion of household remedies is not to ridicule either the preparation or the treatment, but is to urge the physician to analyze the mixed preparation that he orders to see what its actual value is, and to decide if that mixture is really just what he desires for his patient, and to urge him not to order by hospital routine.

5. Favorite cough syrups with druggists and with physicians, and therefore used by many people for coughs and colds, are the compound syrups of white pine, of which there are a number on the market. Some contain sedatives, as heroin or codein; others do not. All are sweetish, stomach-disturbing mixtures. It cannot be too frequently repeated that the presence of a cough is no reason for upsetting a patient's stomach by sweet, syrupy cough mixtures, and it is always inadvisable. If ammonium chlorid is needed it should be given in a sour mixture or administered in lemonade. If terpin hydrate is advisable, it should be given in sufficient dose to be of value; the dose in liquid preparations is insufficient for adults. Terpin hydrate is very insoluble, and no teaspoonful of liquid can contain more than 0.12 gm., or 2 grains, if it contains that. The adult dose is 0.3 gm. (5 grains) every four hours. As it is tasteless, it can be administered in a tablet, to be crushed, or in powder. It is a question whether there is any real good pharmacologic or therapeutic reason for administering a syrup of white pine.

(To Be Continued Next Week.)