

# Conservation

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## Cure for Goitre in Domestic Animals

Lack of Iodine in Feed Said to Be Cause of Disease

That a supply of iodine in the food of domestic animals is a preventive of goitre in their offspring is the conclusion of an investigator of the Montana Agricultural College. In some portions of the West, farmers suffer considerable loss through the young of cattle, sheep and pigs being born hairless and having goitre. It was found that these defects, which usually went together, could be avoided if the mothers were moved out of the infertile areas during a portion of the period of gestation.

The investigation showed that along with hairlessness and over-development of the thyroid gland there was almost always a thickening of the skin of the head and neck. Examination of the enlarged thyroid glands demonstrated that they contained much less iodine than was normal and the conclusion was drawn that the animals were not getting enough iodine in their feed and water. How to overcome this deficiency was the problem. A test was made by feeding iodine in the form of iodide of potassium (129.5 to 324 mgm. per head daily) to sows during gestation and positive results were obtained. The young animals were entirely free from goitre.

## HOME-GROWN CLOVER SEED PREFERABLE

On a number of the farms in Dunsmuir county where illustration work is being conducted by the Commission of Conservation, home-grown clover seed has been sown side by side with purchased seed. The results have been very much in favour of the use of the home-grown seed. Since the home-grown seed gives best results and the cost of clover seed is very high, every farmer who can keep some for seed this year should do so. There are many very good looking fields which the farmers may not contemplate saving for seed. These should all be kept for that purpose. The crop should not be cut too early. Test it by rubbing out a few heads in the palm of the hand. It should shell out readily before being cut. The farmer who grows his own seed will be more likely to sow an adequate amount of seed to insure a good catch. Do not allow a field to go unharvested that can possibly be saved for seed.

—F. C. N.

## Expansion of Pulp and Paper Industry

Consumption of Pulp in Canada has Increased Rapidly

The pulp and paper industry has expanded very rapidly in Canada during the past ten years, and it appears that Canada is destined to become perhaps the leading country in the world in the manufacture of pulp and paper products from wood. This is largely because of our extensive natural resources of waterpowers and suitable tree species. It is important to point out the opportunities and responsibilities for Canadian engineers in this technical industry. The consumption of paper increases so rapidly from year to year in the more highly developed countries that there is no indication of slackening development, at least for some years to come. Canada now has a total of about 90 mills, many of which are large and of modern design. The export figures for the calendar year 1916 show that pulpwood, wood pulp and paper have increased to nearly half of the total export value (approximately \$100,000,000) of all forest products with the exception of the small proportion of specially manufactured articles.

The softwoods are the most important species for papermaking, spruce and balsam fir accounting for the bulk of the woods used, with hemlock, jack pine, tamarack and other conifers coming into more extensive use. Poplar and basswood representing "soft hardwoods" are valuable for making soda pulp and a variety of hardwoods such as birch and maple are used in smaller quantity. In 1915, the total reported pulpwood consumption amounted to 1,405,836 cords with an average value of \$6.71 per cord. In addition, Canada exported 949,714 cords of pulpwood, which quantity has remained fairly constant for several years while the consumption of pulpwood in Canada has rapidly increased.

—Dr. J. S. Bates.

## PROVINCIAL PLOUGHING MATCH

The annual ploughing match of the Ontario Ploughman's Association will be held at the Central Experimental and Booth farms, Ottawa, October 16th, 17th and 18th, 1918. Trophies and prizes valued at over \$1,500 will be competed for. An attractive feature will be a tractor and farm machinery demonstration, as well as an international match in tractor ploughing. Already much interest is being taken in the match.

## An Ally of Germany

*Germany has a powerful ally working within the boundaries of Canada. Its operations are very effective. It enters munition plants and causes explosions. It cripples hundreds of factories which are labouring to produce war-time necessities. It waits until the grain in the fields is ripe for harvest, and then destroys it over thousands of acres, or else it bides its time until the harvested crops have been stored in elevators and obliterates them by the hundreds of thousands of bushels. It operates in every city and town and in the country districts. It is unceasing in its activities, working by night as well as by day, and for every hour of the twenty-four. It enters countless homes, bringing devastation and sorrow; and last, but not least, it causes heavy loss of life.*

*This foe is not an "alien enemy," but comes of good Canadian stock. It is encouraged by millions of people who believe themselves to be patriotic. Without their help, it would soon be overcome. The name of this great enemy is Preventable Fire, and its principal cause is Canadian carelessness.*

## Fisheries Problems Under Discussion

Canadian Fisheries Association Consider Plans for Developing the Industry

Greater production was one of the outstanding themes at the Annual Convention of the Canadian Fisheries Association, held at Halifax early in August. The fisheries of Canada have made great strides since 1914, especially during the past year. This has been due in large measure to the action of Food Boards and other agencies in urging the use of fish in order to conserve meat. Hitherto unused varieties of fish are finding their way on the markets in ever increasing quantities.

Much interest was shown by the Convention in shipping problems and in matters that affected the wholesale and retail dealer in fish. The need for standard containers as well as for generally improved standards in marketing was strongly urged by some of the delegates. There can be little doubt that improvement along such lines would do much toward developing the inland markets for sea fish. It is to be hoped that the Fisheries Association may be able to bring about improvements in transportation as well as in the packing and curing of fish. Greater production is very desirable and is quite in line with conservation, but careless handling of fish, resulting in waste and loss, tends to offset the advantages to be derived from it.—A. D.

## CURING TUBERCULOSIS

The earlier tuberculosis is detected in an individual case, the greater are the possibilities of a cure. Therefore, help your friend, your neighbour, your relative, to recognize and treat this disease at the start.

The first essential for the treatment is rest until the disease has ceased progressing. The physician must determine when exercise should be resumed. The second is food in abundance until the lost weight has been regained, and a little more. The third is fresh air, indoors and out, but most of the time out, in all seasons and weathers. If the patient sleeps indoors, the windows and the external door of his room, if there is one, should be open every night and all night.

The fourth is hope and determination. Your chances for recovery will largely depend on your attitude of mind and willingness to make a determined effort to recover. Make your sacrifices at the beginning.

## Preventing Waste in Wood Industries

By-products may be Put to Numerous and Various Uses

Saw-mill waste amounts to about 40 per cent of the original tree. The finished lumber, on the average, represents only from 30 to 35 per cent of the tree. New developments in the utilization of wood waste are being made continually, but it is false economy to handle waste unless the by-product industries can be carried on at a profit. Effective utilization calls for a variety of chemical and mechanical processes which must be adapted to the form, species and quantity of wood waste available at any point. Slabs, edgings and trimmings represent 15 to 17 per cent of the tree. Among the more common uses are fuel, laths, box shooks, small slack coeprage, small wooden articles, kraft and sulphite pulp, excelsior, wood flour, wood wool and producer gas. Sawdust accounts for another 11 per cent, and is used to some extent for fuel, producer gas, briquettes, polishing metals, insulating, packing, bedding in stables, floor sweeping compounds, composition flooring blocks, linoleum, improving clay soils, smoking meat and fish, blasting powders, wood flour, plastics, porous bricks, mixing with mortar and concrete, distillation, ethyl alcohol, oxalic acid and carbundum. Bark amounts to about 10 per cent of the tree. It is usually used for fuel, although hemlock and oak barks are important in the tanning industry. A recent development is the use of spent hemlock bark for mixing to the extent of about 30 per cent with rag stock in the manufacture of roofing felt. Experiments on its use in wall board, indurated pails, conduits and wall paper give promise of success. In the manufacture of special wood products a good deal of wood is lost, during seasoning, by decay due to poor methods of storage, and also by warping and splitting. There is a large waste in converting wood into the desired shape for the finished article. Proper co-ordination with plants making small wooden articles brings about a great economy of material. Findings save us as fuel and to some extent for packing, bedding, drying wet land and manufacturing fibre board. Beechwood shavings are required in large quantity by vinegar factories, but this is another case where specially cut wood is usually used instead of relying on by-product wood from various plants.

—Dr. J. S. Bates.

### Doolan vs. Clancy

Some Business-like Back Verandah  
Comment on Unsantary  
Meat Shops

"DO you get your meat at Clancy's yet, Mrs. Doolan?"  
"Sure I do not, Mrs. Hogan. I happened to go over there one day instead of phoning, and I noticed quite a lot of flies crawling over the meat on the counter."



A VIEW OF THE FAMOUS LONG SAULT RAPIDS WHICH ARE AGAIN SUBJECT OF CONTROVERSY

The Long Sault rapids in the St. Lawrence river have long attracted the envious eyes of power magnates in both Canada and the United States. The St. Lawrence Power Co., a subsidiary of the Aluminum Co. of America, is seeking to obtain certain rights in the South channel of the Sault. It is endeavouring to obtain piecemeal what it failed in 1910 to get in one bite. Their application to the International Waterways Commission met with opposition from the Canadian Government, which is urging for either national or international development of the whole river, so as to prevent the alienation of the country's rights to this valuable national resource.

The Aluminum Co. acknowledged that the proposed works would yield 114,000 horse power in addition to the 76,000 h.p. already developed. They stated that the works would only cost \$350,000 and would increase the output of aluminum 7,000,000 lbs. per annum. If a profit of only five cents per pound were made on this increase of output, it would repay in one year the whole expenditure, namely, \$350,000.

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"Had he no fly screens?"

"Yes, but the screen door at the back was full of holes, and the spring on it was no good at all."

"Did you say anything to them about it?"

"I did so, Mrs. Hogan. When the young man came over to serve me, I pointed to the flies and I told him that not another pound of meat would I buy out of that shop until it was cleaned up."

"And you did right, Mrs. Doolan. If the man doesn't know enough to protect his meat from filth and maybe disease germs carried by flies he should not be in that business."

"Well, Mrs. Hogan, I believe it did some good, for although I have not been in the store since, I noticed that he has a new screen door with springs on it."

"Good for you, Maggie Doolan. If the rest of us women would speak up whenever they notice dirty conditions in any food store or milk shop, there would soon be a difference."

"Some women would be afraid to say anything."

"That is so; but they might drop an anonymous letter in the box, or bring the matter up at the Women's Club."—*Winnipeg Health Bulletin.*

### STREAM POLLUTION SERIOUS

The Hagar Strawboard and Paper Co., of Xenia, Ohio, was recently fined \$100 and costs for allowing refuse liquors from its paper mills to enter Massie creek, killing large numbers of fish. The company claimed that the liquors entered the creek accidentally. Pollution of streams is a serious matter.

### HOW TO MAKE JELLY

Fruit Jellies May Be Put Away  
Now and Boiled Down Later

FRUITS to be used should be sound, just ripe or slightly under ripe, and gathered but a short time. Wash them, remove stems and cut large fruits into pieces. With juicy fruits, add just enough water to prevent burning while cooking. In using fruits which are not juicy, add water until two-thirds of the fruit is covered. Cook slowly until the fruits are soft. Strain through a bag made of muslin or two thicknesses of cheesecloth or similar material.

Instead of sugar use  $\frac{3}{4}$  cup corn syrup to 1 cup of fruit juice. Boil the jelly to one-third its volume and add the corn syrup. Boil rapidly. The jelly point is reached when two drops run together and fall as one from the side of the spoon. Skim the juice, pour into sterilized glasses and cool as quickly as possible. Seal with layer of paraffin and a cover of metal or paper.

Fruit juices may be canned now and made into jelly when it is more convenient and cooler and the supply of sugar makes it possible. Boil sugar and juice for five minutes. Pour into sterilized bottles or jars. Pour into hot-water bath, with the water reaching to the neck of the containers. Allow to simmer 20 to 30 minutes. Seal air-tight and carefully label each container.

A whale meat cannery on the coast of British Columbia is putting up 500 cases of whale meat per day.

## Factors in Production

### 10. After-harvest Cultivation

Adequate cultivation is just as essential for the production of maximum crops as is the application of manure. In fact, many farmers assert the plenty of intelligent tillage is almost equal to a coat of manure. Such statements do not detract from the value of manures or other fertilizers but they serve, in some measure, to bring into relief, the need for maintaining the soil in the best possible tilth. The proper time to commence tillage is immediately after the crop has been removed. If the soil is infested with weeds, shallow cultivation, either with a gang-plough or a disc harrow immediately after harvest, will cause the germination of the weed seeds. Subsequent cultivation will kill these young plants and, if the ploughing has been done early enough it may be possible to effect the germination of a second growth of weed seeds before the final "ridging-up" ploughing is done late in the fall. This is one of the most effective means of combating such weeds as with oats and mustard.

Where the land is comparatively free from weeds some advocates of after-harvest cultivation favor deeper ploughing, for the purpose of retaining more moisture from the autumn rains. This is a matter of experience and the individual farmer should experiment and decide for himself which method is most suitable to the needs of his soil.

The final ploughing in the autumn should leave the land ridged, so that frost action will pulverize it thoroughly. In this way a fine surface mulch is formed during the winter, which dries out quickly in the spring at the same time it forms an excellent seed bed and protection for sub-surface moisture.

Scarcity of labour may make this process difficult, if not impossible, on many farms. But, where such handicaps do not exist, every effort should be made to practice after-harvest cultivation. It is a factor of prime importance in increasing production next year.—A. D.

### USEFUL HINTS ON CANNING BEETS

Use only small beets for canning. Wash, scrubbing if necessary, and get very clean. Cut off all but an inch of leaf stems. Grade, and blanch 15 minutes. Cold dip and scrape off skin and stems. Beets averaging 1 inch in diameter may be packed whole, but larger ones may be cut in convenient size for packing.

Add 1 level teaspoonful of salt to each quart jar, and cover the pails with boiling water. Put on a new rubber and the top, dipping them both in hot water just before placing. Add just the top ball or screw on the top with thumb and little finger.

Sterilize 90 minutes in hot water bath, or 60 minutes at 5 to 10 pounds steam pressure. Remove from sterilizer, seal tight and cool.

**Commission of Conservation  
CANADA**

**Sir Clifford Stovon, K.C.M.G.**  
Chairman  
**James White**  
Assistant to Chairman and Deputy Head

CONSERVATION is published the first of each month. Its object is the dissemination of information relative to the natural resources of Canada, their development and proper conservation, and the publication of timely articles on town-planning and public health.

The newspaper edition is printed on one side of the paper only, for convenience in clipping for reproduction.

OTTAWA, SEPTEMBER, 1918

**THE UNNECESSARY CAT**

Nature has provided in the form of bird life a means to counteract the action of agents destructive to plant life. While artificial means may, to a limited extent, hold the multiplication of insect life in check, no human agency can accomplish the results which are secured by the birds.

Man, by his own action of inaction, is responsible for the causes which restrict the increase in the number of our birds. Slaughter and the robbing of nests by men and boys and the treacherous family cat have made such inroads on their numbers that the balance provided by nature has been destroyed.

By the recently consummated Migratory Bird Treaty, the protection of migratory birds from destruction by man has been provided for. No attempt has been made, however, to remove the menace of the unnecessary cat. The elimination of it must, therefore, be left to the good sense and the public spirit of the individual citizen. The number of these prowling destroyers, and their predilection for birds as their prey, cause the loss to Canada of vast numbers of our best food conservers every year.

**A Comedy of Errors**

The Fire Marshal of the state of Wisconsin has issued a bulletin which terms a "Comedy of Errors." It should have been called a tragedy. It says:

He looked for a gas leak with a match, and found it.

He lighted a match to see if his gasolene tank was empty. It was not. He smoked while filling his auto tank, but will do so no more.

He smoked in bed; so did the bed clothes.

He threw the matches into the waste paper basket. He is wiser now. He threw a cigarette stub into some rubbish.

He saved his oily waste and oily rags and they burned the shop.

He washed his hands in gasolene near the stove. The doctor washes them now.

He did not worry about fires as he had "plenty of insurance," and forgot the safety of his wife and children upstairs.

He stuffed up the chimney holes

with paper and rags.

She cleaned her gloves with gasolene and saved fifteen cents, but paid the doctor and druggists fifteen dollars.

She poured kerosene into the lamp while the wick was burning.

She put gasolene into the wash boiler on the stove to make washing easier.

She dried clothes too near the stove.

She used the wrong oil can.

She larned sulphur all over the house to fumigate.

She used the wood-box back of the range as a waste paper receptacle.

She gave matches to her children to go out to burn leaves in the yard. The cotton dresses burned easier than the leaves.

She was "coming right back," so left the electric current on in her iron.

She swung the gas bracket too close to the curtains.

She fixed up a fine tissue paper shade for the lamp.

She filled the tank of her gasolene stove while one burner was going.

The comedies have turned to tragedies; many of the scenes of action were in ashes and too many of the actors are maimed or dead, more will follow, no doubt, as they are prone to ignore the advice and experience of others instead of profiting by their errors and sufferings.

**CONSERVATION NOTES**

"Very concise and complete" is the comment J. Macgregor Smith, Professor of Agricultural Engineering in the University of Saskatchewan, makes on the Farmer's Account Book, published by the Commission of Conservation.

Since the outbreak of war, France has lost 2,600,000 head of cattle. Those remaining are greatly reduced in weight and increasingly larger numbers of them have to be killed to produce the same weight of dressed meat.

There is great activity in oil and gas production in Southwestern Ontario. Successful drilling has been done in West Dover township, Kent county; near Avylmer in Elgin county; near Thamesville, Kent county; Glencoe, Middlesex county; Long Point, Norfolk county; and near Stevensville, Welland county. Most of the wells are slightly over 3,000 feet deep and are in the Trenton geological formation.

The lady bug is one of the gardner's best friends. It is an invaluable enemy on all forms of plant lice.

A number of Mexicans have been imported to pull flax and look after the sugar beet crop in Lambton county, Ontario. They are said to be good workers.

President Wilson says the coal shortage is the most serious danger now facing the United States. That is the country from which we get our

anthracite. Have you got your coal bin filled yet?

To forestall any shortage in fall wheat seed, the Ontario Department of Agriculture is importing, from New York state 50,000 bushels of a variety similar to Dawson's Golden Chaff. It is being assembled and cleaned by the Shredded Wheat Co. at Niagara Falls and will be distributed through the millers at \$2.50 per bushel.

The Alberta Department of Agriculture acting in conjunction with the Dominion authorities have taken steps to equalize fodder and, cattle conditions in Alberta by arranging to winter cattle from the southern drought-affected districts in the north where early frosts have increased the supply of fodder.

The seven trawlers operating in Canadian waters bring in 1,000,000 lbs. of fish weekly.

Seager Wheeler, the noted Saskatchewan wheat grower, has developed a variety of wheat that is claimed to mature ten days earlier than the famous Marquis wheat, and is, therefore, practically immune from rust and early frost on the prairies.

Cresote oil, a product of the distillation of wood, has been found by the Forest Products Laboratories to be an efficient substitute for Southern pine oil in the flotation process of separating minerals.

Reconstruction after the war will rely largely on co-operation. Co-operation of men and women in kindred industries, of those in agricultural pursuits with those engaged in manufacturing, of capital and labour. It is of first importance, therefore, to remove the causes for suspicions and mistrust between all classes, in order that the social revolution that will come at the end of the war, may be a peaceful and beneficial one.

Can nothing that can be kept without canning. Dry such vegetables as corn, string beans, navy beans, lima beans, etc. Store mature potatoes and other roots in bins, cellars or pits.

Can everything else.

"Every time you fill the tank of your auto or tractor by lamp or other open light, you are inviting an explosion."

British Columbia canned herring is meeting with a growing demand. It is estimated that 250,000 cases will be backed this year, an increase of 15 per cent over 1917.

**LITTLE THINGS**

It was only a little camp fire, but it blackened that beautiful spot; It was but a little match that burned the farmer's lot; It was only a cigarette, so the tourist says; It was only a little spark, but you and I had to pay. PUT IT OUT—PUT IT OUT. —U.S. Forest Service.

**HINTS ON STORING COAL**

During the present year, consumers are storing coal as long in advance of winter as possible. It is important, therefore, that they should take precautions in the storage if loss through spontaneous combustion is to be prevented. There are certain simple methods of handling coal that experience has taught are necessary to obviate such a misfortune, especially where considerable quantities are to be stored. Thus, coal should be so piled that air can circulate through it freely to carry off the heat, or so closely piled that air cannot enter the pile. Low piles are preferable if space permits and alleyways should be provided to facilitate moving the coal quickly. Occasional ventilation pipes are ill-advised, but the practice of placing such pipes close together has been tried in Canada with effective results. Different kinds of coal should not be mixed in storage.

In quenching fire in a pile, water should only be used if there is an ample supply; a small amount is ineffective and very dangerous.

Where available, under-water storage is recommended as it entirely eliminates spontaneous combustion. The preparation of a suitable pit for this method of storage is sometimes costly, but old quarries, clay pits and even prairie sloughs have been used. Deterioration of coal stored under water is negligible and it absorbs very little extra moisture.—L. G. D.

**Letters to the Editor**

**MOVIES AND THE ORPHAN**

Editor of CONSERVATION: It has become a popular thing in motion picture plays to depict the orphan child as cruelly and harshly treated in a wretched foster home, and whenever these pictures are shown, as they frequently are of late—the audience is quick in its expressions of pity and horror. Such cases do happen occasionally but they are becoming increasingly rare as our child protection work advances in more efficient organization. They are well advertised and often overshadow completely the great and beneficial work that is done in foster homes. Evil is always so much more in evidence than good! It may interest the public to know that many adopted children have graduated from our universities and ladies' colleges, become teachers in our public and high schools, soldiers, trained nurses, and clever business men; while thousands fill less pretentious but equally useful positions in society. Justice should be done the people who freely give their time and means in the care and training of these children. We have high ideals in this work and only desire to place children in homes where they will be sure of loving and sympathetic care, and the whole community should be interested. If at any time a mistake is made those who know of it should report without delay.

J. J. KELLO.  
University Avenue, Toronto.

Get ready for the next Victory Loan.

## Care Needed When Using Electricity

Simple Rules for the Prevention of Accidents on the Street and in the Home

Electricity, like fire, is a valuable servant, but a dangerous master. So long as it is kept in perfect control it is the most convenient and cleanly source of energy that science has made available for use in the household. But it must be controlled. Hundreds of lives are lost every year and much property destroyed as a result of defective wiring and the careless handling of this remarkable unseen force.

Below is a brief summary of recommendations by the United States Bureau of Standards which, if followed, will go far toward eliminating accidents in the use of electricity:

(1) Never touch a wire or any electrical device which has fallen on a street, alley or lawn, or which hangs within reach, if there is any possibility that it may be touching any overhead electric wire. This applies to insulated overhead wires as well as to bare ones.

(2) Avoid touching guy wires which are used to anchor poles to the ground, or the ground wire run down wood poles. Never try to jar arc lamps, nor touch the chains or ropes supporting them. During and after storms do not touch even the poles, if wet.

(3) Never climb a pole or tree or near which electric wires pass. Never touch such wires from windows nor while on roofs. Warn children against climbing poles or standing on pole steps.

(4) Never throw string, sticks, or pieces of wire over the electric wires carried overhead. Also, never fly kites near overhead wires, nor throw sticks or stones at insulators.

(5) Do not touch or disturb any electric wiring or appliances in buildings except such as are intended to be handled. Keep furniture and other materials away from interior wires, or see that the wiring is in conduit, or otherwise adequately protected against mechanical injury. After using portable heating appliances, irons, etc., turn off the current before leaving them.

(6) Never touch those interior live metal parts of sockets, plugs, etc., which are used to carry current. Use the insulating handles which are provided for that purpose. While in bathrooms, toilet rooms, kitchens, laundries, basements or other rooms with damp floors, stoves, heaters or pipes, etc., which may be touched; avoid touching any metal part of lamp sockets, fixtures, or other electrical devices since they may accidentally be alive. While in a bathtub never touch any part of an electric cord or fixture even if it is a non-conductor. The use of electric vibrators in the bath is dangerous. Avoid touching stoves or other metals when using electrical stoves, particularly during electrical storms.

(7) Never try to take electric shocks from the wiring in buildings or on streets nor induce others to take such risks.

(8) Avoid touching bare or abraded

spots on flexible electric cords. Do not hang such cords on nails and when damaged have them repaired or replaced by a competent electrician.

(9) Never touch a person who has been shocked while he is still in contact with the electric circuit, unless you know how to remove him without danger to yourself. Call a doctor and the nearest lighting company. Use a long dry board or wooden-handled rake or broom to draw the person away from the wire, or the wire away from him. Never use any metal or any moist object.

(10) To resuscitate a person suffering from electric shock draw his tongue out of his throat and apply artificial respiration for two or three hours, if necessary.

(11) Watch for and report any fallen wires, defective wiring, etc.

(12) Never employ anyone but competent electricians to repair or change wiring and do not attempt it yourself unless qualified to do so.

## A NEWSPAPER PROCESS

The Taggart Paper Co. of Great Bend, N.Y., has developed a process for the making of newsprint from all ground-wood pulp, omitting entirely any proportion of sulphite pulp. Mr. George C. Sherman, president of the company, in an interview given to the *Paper Trade Journal*, said:

"It requires two cords of wood for a ton of sulphite pulp, while one cord of wood will make more than a ton of ground-wood pulp. It takes 20 per cent more timber to make paper out of 20 per cent sulphite than it does out of all ground wood. One-fifth more acreage of timber is required for the sulphite method."

If this process should prove generally feasible it will do much to conserve Canada's forests. It would also effect a considerable saving in the cost of manufacturing newsprint and in the consumption of sulphur, which is in demand for the making of munitions.

## WAR GARDEN PRODUCE MARKET

An interesting plan to provide a market place for the produce from war gardens has been put in operation in Oklahoma City. One hundred women of that city signed notes for \$25 each, payable the 1st of September, and the entire amount was underwritten and is now being used for the erection of a building. This building is being constructed at cost and will provide a market place for those who grew the produce offered for sale. A Liberty Kitchen will be established in this Liberty Market, to can and preserve the produce which is not sold. The market will maintain the kitchen by the payment of wagon dues and the kitchen will provide an excellent stand for the market with a ready outlet for its produce. The kitchen will accommodate classes of 50 women and will contain a complete canning outfit. The proceeds from the canned produce will be used to defray the initial expense of the building and other incidental expense which may arise, according to W. J. Pette, State merchant representative in Oklahoma for the Food Administration.

## It Pays to Select Potatoes for Seed

Before the Tops Die Down in Autumn is Best Time to do so

Recent investigations have shown that lack of vigour in the seed potatoes planted has been the cause of poor yields and inferior quality in the resultant crop. It has also been found that seed from New Brunswick or New Ontario gives better yields in older Ontario than home-grown seed. It may not be convenient for every farmer to purchase seed grown in New Brunswick or New Ontario, but a process of selection can be conducted which will materially increase yields and profits. Usually the best potatoes are found in the hills which have the strongest and most vigorous tops. These should be marked before they die down in the autumn and kept separate at digging time for seed the following year. This will not cost anything except a little time and it will be time profitably spent.

While conducting illustration work on farms, the Commission of Conservation has noted increases in yield as high as 33 per cent from the selected seed over the seed from the common bin. Select enough now, for a seed plot next year.—F. C. N.

## USE PLENTY SEED WHEN SOWING CLOVER

Among other comparisons being made on farms in Dundas county by the Commission of Conservation is that of thickness of seeding of clover. Many farmers sow too small an amount to insure success, in some cases as low as two or three pounds per acre being sown. On the farms where five pounds or less was ordinarily being sown per acre, an acre or two was sown in 1917 with double the amount usually sown. The difference was not so noticeable in the young seeding during the autumn of 1917, but the results were decidedly in favour of the thicker seeding at haying time this year, 1918. In a number of instances, there was just about the same difference in amount of hay as there was difference in amount of clover seed sown. If everything is favourable, a seeding of less than ten pounds of red clover to the acre may give good results, but it is much safer to sow clover seed liberally along with the timothy.—F. C. N.

## TRIBUNAL JUDGE URGES FARMERS TO KEEP BOOFS

Bookkeeping by farmers to show just what their farms are producing and if they are materially increasing their outputs, was advocated recently by Mr. Justice Masten, in addressing his exemption tribunal at Toronto. He pointed out that the keeping of such records would be of great value to the farmers if, on the expiration of their exemptions, they appeared again before a tribunal to seek further extensions of time.

The Commission of Conservation has designed a simple but complete Farmer's Account Book which will be sent free to bona-fide farmers who ex-

## Make War on Rats

Interesting Facts About the Immense Losses Caused by These Pests

"The rat is responsible for more deaths among human beings than the wars in history." This startling statement was made recently by Dr. E. L. ... of the United States Biological Survey. Through the fleas that infest these rats are almost wholly responsible for the perpetuation and transmission of bubonic plague and it has been proved that they are active agents in spreading pneumonic plague, diseases which have destroyed at various times, millions of the world's population. Only preventive measures have prevented the outbreak of these diseases at large American sea-ports during recent years and constant vigilance at all great sea-ports is essential to prevent epidemics.

The economic loss caused by rats is almost incredible. It was estimated before the war that, in Great Britain the annual damage due to rats amounted to \$73,000,000; in France \$38,500,000; in Germany, \$47,600,000; in Denmark, \$3,000,000, and the United States as much as \$20,000,000. To this must be added the cost of fighting the animals and the loss of human efficiency through diseases carried by them.

They are also exceedingly prolific. The brown rat, the largest and fiercest species found in America, will breed from six to ten times a year if food plentiful, and will produce as many as ten, or even more, young to a litter.

The migrations of rats from one district to another are of much interest. During a series of years they may be comparatively scarce in a neighbourhood, when suddenly they become abundant and do immense damage. These migrations are usually due to seasonal conditions and to an overflow of the rat population in more regularly infested areas.

To combat the pests one of the best means is to render all buildings proof. Grain store houses should be put on posts at least 18 inches high and each post covered with some form of sheet metal. Cellars and basements should be floored and lined with concrete, windows well screened and drains properly trapped. Grain and food must be kept from their reach every possible manner. The best means of destroying them is by means of dogs, cats, poisons and traps. Poisons require careful handling on account of the danger to other animals and also to human beings. The best trap to use is the small snap wire trap. It has the advantage of being cheap and, where rats are plentiful, the four dozen of them can be used with advantage. It is important for every one in an infested neighbourhood to combat them, for, if a single farmer or householder neglects to do so, his premises may provide a menace to the whole district.

Express their intention of keeping records of their farm work. Many farmers do not know whether they are making or losing money till it is too late to avoid financial failure.