

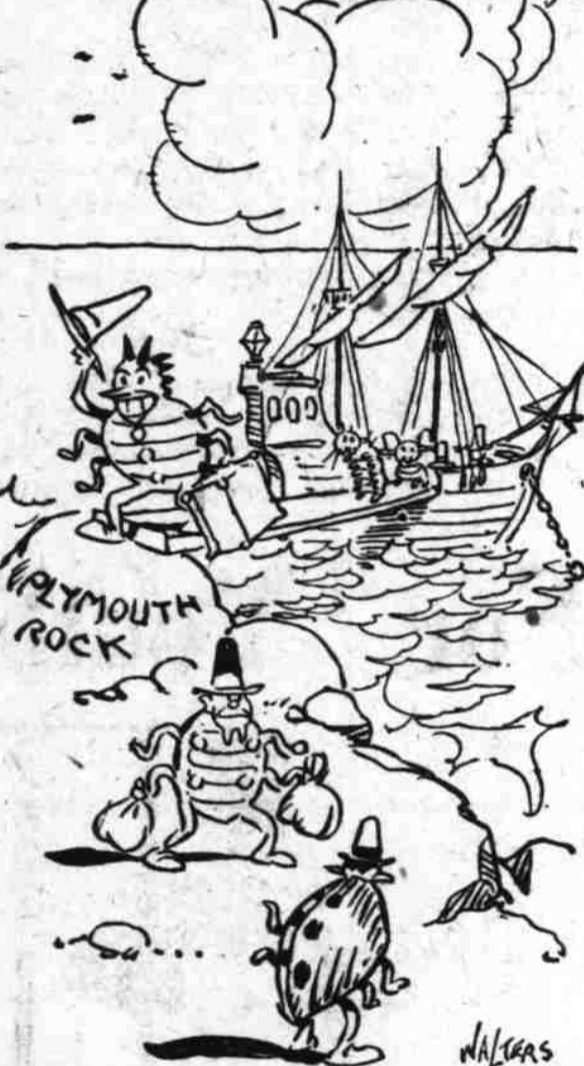
Annual \$500,000,000 Banquet of Enemy Aliens



RAVAGES OF CHESTNUT BLIGHT



NEARING THE END



WYOMOUTH ROCK

CORN BORER IN ACTION

A \$500,000,000 banquet to alien enemies has been given annually by the American public. These aliens were not invited here, have performed no service, and yet have been fed on the fat of the land, adding to the high cost of living. They have tremendous appetites, consuming trees or entire forests, garden crops and fields of grain and cotton. These undesirable citizens have made America their adopted home as insects and plant diseases which have been introduced from foreign countries, writes Charles Lathrop, president American Forestry Association, in American Forestry.

There's a pest for every plant. Some plants have more than a thousand insects and fungus diseases which attack some portion of them, causing death or injury. However, most of the pests which attack our plants are native to America and have natural enemies which keep them in check.

"And all those fleas have little fleas, upon their backs to bite 'em, and those again have lesser fleas, and so 'ad infinitum."

Thus native insects have a host of vicious enemies, including birds, animals, and other insects, which preserve the "balance of nature." The ravages of native pests seldom become devastating except occasionally in small areas and for a short time when conditions become exceedingly favorable for their rapid propagation.

Heretofore, America has maintained an open door to plant immigrants and, year after year, destructive insects and plant diseases have come to this country on these plants from abroad. Some of these pests have found the land of freedom entirely to their liking. Sometimes the climate here has been exceptionally favorable for their rapid development, at other times they have found new food plants. In such cases they have propagated rapidly because the balance of nature was no longer maintained. In most cases the fight against imported plant pests has been too late.

The uncontrolled ravages of the late blight and rot of potatoes in 1916 was responsible for the shortage in the potato crop which sent prices soaring. The Colorado potato beetle, the European spruce sawfly and scurf are two other pest diseases which have been brought in from abroad. More recently the potato wart disease, established in Pennsylvania from European immigrants, has given cause for alarm.

The Hessian fly, introduced from Europe in revolutionary times, causes an average annual loss to the wheat crop of fifty million dollars, and in some years the loss from this one insect has exceeded one million dollars. The loss of fruit due to the codling moth, together with the money spent in controlling this insect, costs the United States over sixteen million dollars a year. The European corn borer, the San Jose scale, entails a loss of at least one million dollars annually.

The tale of the gypsy moth, in rich rhyme, illustrates what happens when an insect reaches the United States from another country. To paraphrase:

There was a man who freed two moths, And those two moths were mothers, That year there were a million more, The next a million others.

They had tremendous appetites, And wrought great devastation, Until the state with wrath arose, And fought like Carrie Nation.

A fight was begun which has lasted for years and today it has cost more than fifteen million dollars in cash for applying control measures, besides many times this amount of property damage.

The chestnut blight is a bark disease which was brought to this country from the Orient on Japanese chestnut nursery stock. It was first found on western Long Island in 1904. In ten years it spread over half of the chestnut area of the United States and at the present time it has practically exterminated the chestnut trees within a 100-mile radius of New York and is rapidly accomplishing the complete ruin of our magnificent chestnut forests of the South. The loss is many million dollars and its ultimate end will be the extinction of one of the most useful and most profitable American forest trees, as no remedy has been found. Only recently it was found that a similar disease attacking the poplars had been imported from the nurseries of France and had spread over a wide area of the United States.

Other dangerous pests introduced from abroad are the Oriental peach moth, the Japanese beetle, the European earwig, the Leopard moth, the alfalfa weevil, the European elmworm.

The European corn borer is a pest which apparently was brought to the United States in a cargo of hemp unloaded at a rope factory near Boston. It is exceedingly destructive to corn, feeding by boring in the stalk. In its operation it works upward, eating out a chamber from the pith. The developing ears are also sometimes hollowed out. As high as 90 per cent of

Not Going to Withdraw It.

A man who had a very bad impression in his speech once got into an argument with an acquaintance to whom he had often a great dislike. The dispute became hotter and hotter until the unfortunate stammerer completely lost his temper. "You're a f---t-fool!" he shouted furiously. "Sir," replied the acquaintance coolly, "you must retract that at once." "Never!" retorted the stammerer. "I'm only too glad to g-g-g-get out!"

the stalks in a corn field may be infested. Over two hundred borers have been found in the stalks growing in one hill of corn. Control is made more difficult by the fact that the borer feeds on a number of other plants, including the stalks of weeds and flowers, and may live over winter in grass roots. It is so menacing that the present agricultural department appropriation bill contains an item of \$250,000 for fighting it.

The bureau of entomology, United States department of agriculture, has published descriptions of over 3,000 distinct insect pests which are likely to be introduced into this country and cause serious loss. About half of these are European insects which feed upon forest and shade trees and the rest infest various cultivated crops. Among the important insects which it is hoped to exclude from the American continent are the Mediterranean fruit fly, considered by entomologists to take first prize as a destructive fruit pest, and the pink boll worm of cotton, from Mexico, which is capable of making the best efforts of the cotton boll weevil appear puny in comparison.

The life stories of some of these pests, as unfolded by years of study on the part of patient scientists, are so amazing as to be classed with fairy stories by those who are little acquainted with the wonders of nature. White pine blister rust is an instance. This parasitic fungus is native to the old world, attacking the stone pine and other native five-leaved pines of Europe. White pines imported from Germany, France and Holland, brought this disease to the United States, principally in 1908 and 1909. Curiously, the safety of our white pines depends entirely on whether we can control the spread of the disease on currant and gooseberry bushes. The fungus cannot go directly from one pine tree to another but first must spend part of its life on currant or gooseberry leaves and in this stage it has the power of spreading rapidly and widely to other currant and gooseberry bushes. The fungus then develops another stage by which it is enabled to pass back to the pines. If we destroy the currant and gooseberry bushes we prevent the disease from infecting our white pines. Hence, the salvation of these magnificent trees depends to a large degree on whether people are willing to forego the luxury of currant jelly and gooseberry jam.

The system of inspecting the importations of foreign nursery stock has proved ineffectual because the eyesight of the most competent inspector is not capable of discovering every insect or plant disease on every plant. Many of them, especially fungi, are hidden under the bark and are entirely invisible. It must be remembered that of many of these pests we have no conception, based on experience in its native land, as to its destructive powers under American conditions.

The question "what shall we do about it?" has been answered correctly by the federal embargo, which prohibits further importation of plants from abroad except such as are specifically sanctioned by the United States department of agriculture.

Full Glory of Cherry Blossoms.

Blooming of the cherry trees in Japan occurred earlier this year than usual, owing to the exceptionally warm weather of the early months. The blossoms were out in great profusion on Sunday, March 30. The bigan sakura trees in Ueno park were in full bloom; the yoshino sakura, or common variety, came out in full florescence on April 3, the anniversary of the first emperor of Japan. Everybody in Japan enjoyed the arborescence of springtime.

Volcanoes in Britain.

The two great centers of earthquake activity in the British isles are Comrie, in Perthshire, and Mersea Island, in the mouth of the Blackwater, on the Essex coast. In both these localities earthquakes are frequent, and earthquakes are usually a sign of volcanic activity. Highly unpleasant as it would be, geologists would be no more surprised at the resurrection of one of the British volcanoes than they have been at the rebirth of Mount Etna.

IMPROVED UNIFORM INTERNATIONAL SUNDAY SCHOOL LESSON

(By REV. P. B. FITZWATER, D. D., Teacher of English Bible in the Moody Bible Institute of Chicago.)
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LESSON FOR JULY 20

THE LORD'S SUPPER.

LESSON TEXTS.—Mat. 26:26-30; I Cor. 11:23-34.
GOLDEN TEXT—For as often as ye eat this bread, and drink this cup, ye do show the Lord's death till he come.—I Cor. 11:26.
ADDITIONAL MATERIAL.—Mark 14:22-26; Luke 22:14-30; I Cor. 10:14-21.
PRIMARY TOPIC—Remembering Jesus (Luke 22:19).
JUNIOR TOPIC—The Lord's Supper reminds us of Jesus.
INTERMEDIATE TOPIC—The meaning of the Lord's Supper.
SENIOR AND ADULT TOPIC—Communion with Christ and with one another.

I. The Institution of the Lord's Supper (Matt. 26:26; I Cor. 11:23).

1. Time: It was on the night of the betrayal of Jesus, just after the betrayer had been announced.

2. The circumstances: In connection with the eating of the Passover. At the command of Jesus the disciples made ready the Passover, and while they were eating, Jesus took bread, blessed it and gave it to the disciples.

3. Elements: (1) The bread. This doubtless was the common bread of the Passover feast. (2) The cup. This cup consisted of the fruit of the vine.

II. The Significance of the Lord's Supper (Matt. 26:26-28; I Cor. 11:24-26).

Jesus took natural and literal elements and made them to be symbols of his own body and blood. Just as our bread and drink are assimilated into brain and brawn, becoming an integral part of our body, so by means of these symbols the communicant partakes of Christ. He becomes a part of us and we are in him. It is both a memorial and a prophecy.

1. A memorial of the Lord (Luke 22:19). When he went away he left the bread and the cup for the disciples by which to remember him. Those who love him will desire to keep sacred this memorial.

2. To show the Lord's sacrificial death (I Cor. 11:26). He did not die as a hero or as an example of unselfish devotion, but as a substitutionary ransom. On the cross he made expiation for our sins.

3. It is a guaranty that our sins are forgiven (Rom. 4:25). When the believer partakes of these elements his faith is confirmed. "It is a signet of the Son of God attached to redemption."

4. Through them the believer received Christ (I Cor. 10:16). He thereby participates in the body and blood of Christ, becoming a member of his body. Christ liveth in the believer (Gal. 2:26). The Holy Spirit communicates the life of Christ to believers, making them one body, joined together (Eph. 4:16). This union is illustrated by the figure of the human organism (I Cor. 12:12-27); the vine and branches (John 15:1-8); the husband and wife (Eph. 5:25, 26); we are one bread and one body (I Cor. 10:17).

5. A forward look to a completed redemption (I Cor. 10:26). When faith is exercised in Christ, redemption begins, and its completion will take place at the coming of Jesus Christ (I Thess. 4:16, 17). The bread and the cup constitute the keystone of the Lord until he returns. These elements possess an immense psychological value both as a memorial and a prospect.

III. Qualifications for Participation in the Lord's Supper (I Cor. 11:27-34).

1. A proper apprehension of its meaning (v. 27). Eating and drinking "unworthily" does not refer to the demeanor of the communicant, but to the failure of the communicant to grasp its meaning and importance. Therefore, to thoughtlessly engage in this service is to do it "unworthily." Only a regenerated person can discern the Lord's body (v. 29, cf. 2:14). Faith in the integrity of Christ's person and work is essential. Anyone who does not believe in the absolute deity of Christ and his vicarious atonement is an unworthy communicant.

2. Church membership (I Cor. 11:18-22). The Lord's body is the church which is composed of regenerated men and women, united to Jesus Christ as head and to each other as members of that body by the Holy Spirit.

3. Orderly walk. The disorderly should be debarred from the Lord's table, examples of which are the following: (1) Immoral conduct (I Cor. 5:1-13). It is perilous to the individual who is guilty of immorality to approach the Lord's table (v. 30). Sickness and death are oftentimes visited upon such. This explains why some are mysteriously taken away in death. (2) Heresy (Titus 3:10; John 4:2, 3). (3) Schismatics (Rom. 16:17). Those who are causing divisions in the church should be debarred.

Right at the Center.

Our habitual thoughts and actions determine our characters and they are made moment by moment. If at the center we are stayed on God the circumstances must be right.—Samuel Fallows.

Would You?

Would you remain always young, and would you carry all the joy and buoyancy of youth into your maturer years? Then have care concerning but one thing—how you live in your thought world.—Ralph Waldo Trine.

RURAL SCHOOLS STUDY POTATOES

Guide for Teachers and Pupils Published by United States Department of Agriculture.

ITS IMPORTANCE AS FOOD

One of Most Widely Cultivated of Agricultural Plants—No Crop, Except Rice, Is Eaten by Larger Number of People.

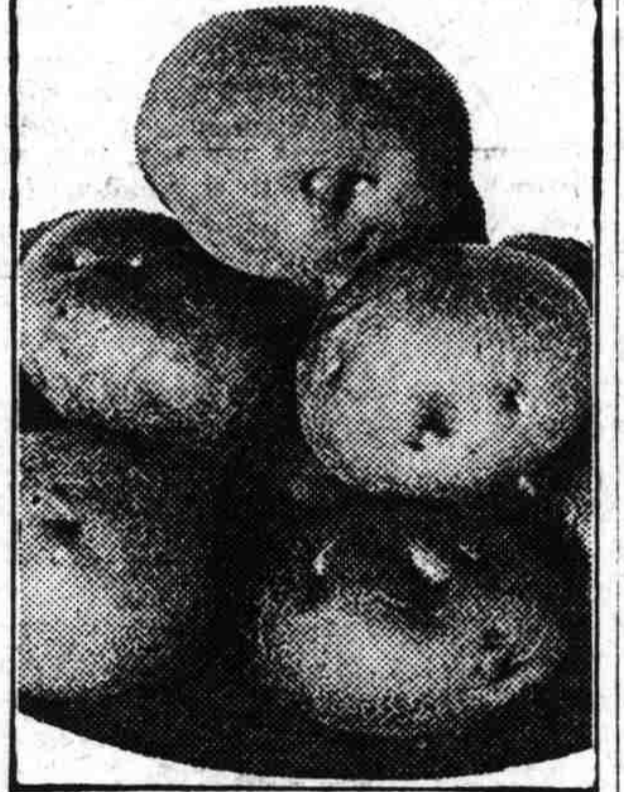
(Prepared by the United States Department of Agriculture.)

A guide for teachers and pupils of elementary rural schools in the study of potatoes has been published by the United States department of agriculture as Bulletin 784, "Lessons on Potatoes for Elementary Rural Schools." The potato is a good subject for study, says the bulletin, because of its importance of food, wide range of growing territory and its possibilities for home project work.

The bulletin contains 12 lessons, including the selection of seed potatoes in the field, harvesting and grading, marketing, winter storage, judging, tuber and plant structure, place of potatoes in the rotation, soils (kind, preparation, fertilizers), planting and seed treatment, cultivation, insect pests and diseases, and uses as food. With each lesson is given the sources of material which may be studied with the subject under discussion, illustrative material that will help in its presentation, class exercises and practical exercises.

Study Different Stages.

As potatoes may be secured at any time of the year, there is no excuse, says the bulletin, for attempting to study them without having at hand specimens which represent good varieties grown in the district. The potato plant in the field should be studied during the different stages of development. Especially should the relation of the new tubers to the seed tuber and the root system of the plant be noted. If no plants are available, a diagram showing the plant as a whole will be useful. Charts showing the composition of the potato and its relative food values should also be made. Pictures clipped from bulletins,



Potatoes Feed the World From Prince to Pauper.

showing types of potatoes, may be mounted for class use.

Importance of Potato.

In referring to the importance of the potato, the bulletin says it is one of the most widely cultivated of the agricultural plants, and next to Indian corn is the most important contribution of America to the food supply of the world. Probably no crop except rice is eaten by a larger number of people. In the more thickly populated regions of northern Europe the potato is now the most important of human foods, furnishing about 25 per cent of the food of the continental and English peoples. Only the oriental peoples exist without it. Not only are the tubers used for food, but they have important industrial uses. As American population increases, the potato will become more and more important in this country, there being no other crop which will give such a large yield of food suitable for man under such varying conditions.

CARE IN HARVESTING OATS

Crop in Southern States Should Be Allowed to Stand Until Fully Ripe—Shock Carefully.

(Prepared by the United States Department of Agriculture.)

Because of the relatively small acreages per farm, oats in the South should be allowed to stand until fully ripe; that is, until just after the grain passes out of the hard dough stage. However, if the area is small and the cradle is used, the grain may be cut when passing out of the milk stage, as it usually is allowed to cure for a short time in the swath before being bound and placed in shocks.

Shocking should be done carefully. Too frequently little or no attention is given to the method of shocking, and in the event of storms and rainy weather much of the grain is damaged, whereas if the shocks had been well built and properly capped little damage would have occurred. When frequent rains interfere with the curing of the oats in the shock, it is advised that shock covers be used if possible.

SHORTAGE IN CLOVER SEED IS PREDICTED

Important That as Many Acres as Can Should Be Left.

Possibility of Good Crop Will Be Greatly Increased if First Crop Is Cut Early—Early Cutting Destroys Midge.

(Prepared by the United States Department of Agriculture.)

Drought during the summer of 1918 and the war have caused a shortage in red clover and crimson clover seed, and it is important in sections where



Red Clover Plant.

seed can be profitably grown that as many acres of clover be left for seed as can be used without seriously interfering with crop rotation. If the second crop is to be left for seed, the possibility of a good crop will be greatly increased if the first crop is cut early. This is especially true if there is any danger from the clover flower midge. Early cutting of the first crop may result in a smaller tonnage of hay and hay not quite as nutritious, but it will destroy the midge. If the field is badly affected with midge and the larvae have had time to mature, a good seed crop is out of the question. For further detailed instruction see Farmers' Bulletin 971.

In sections where mammoth clover is grown fields intended for seed should be rolled. This will cause the stems to lie close to the ground. The flower heads will then bend up and can be harvested, leaving a large part of the clover upon the ground to be turned under for fertilizer. This will also reduce the amount of straw necessary to handle in hulling.

Write your extension director for Farmers' Bulletin 455, Red Clover; 838, Harvesting Hay with the Sweep Rake; 943, Haymaking; and 977, Hay Caps. They give methods of making clover hay. Others may be published by your state agricultural college.

EARNINGS OF CLUB MEMBERS

Indiana Boys and Girls Spend Greater Part of Savings for Liberty Bonds and Stamps.

(Prepared by the United States Department of Agriculture.)

What do club boys and girls do with the money they earn in their work? It is a question frequently asked by persons who have read of their profits. The question was asked approximately 350 boys and girls at the first annual club roundup of Indiana boy and girl club members, held recently at Purdue university in co-operation with the United States department of agriculture. It was found that 58 of those present owned Liberty bonds, which they had purchased with their own earnings; 109 had War Savings stamps; and practically every one had bought Thrift stamps. Thirty-one had started bank accounts with the money they had made in raising corn, pigs, calves or poultry, selling canned products, or from some other branch of club work. Eighty-five owned pigs, 46 owned calves, 28 owned sheep, and 62 owned poultry. Definite plans to attend college by use of money from club work had been made by 117. It was found that of the 350 attending the meeting, 176 had been engaged in club work two years; 70, three years; 9, four years, and four, five years.

PREPARE GULLS FOR MARKET

Select Fowls Which Are Dull or Weak, Old or Young, Except Those With Laying Points.

(Prepared by the United States Department of Agriculture.)

Call out and prepare for market all fowls, old or young, which appear weak, slow, or dull; fowls with drooping tails, rough plumage, or cross-shaped heads; all scrubs except those which have laying points; all hens which molt early; and all males except those strong, vigorous, and of a pure type desired for breeding.