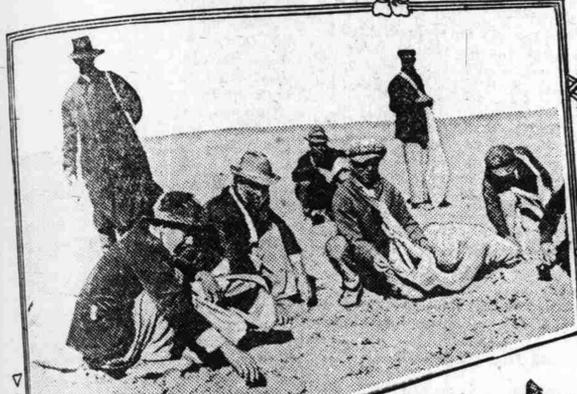
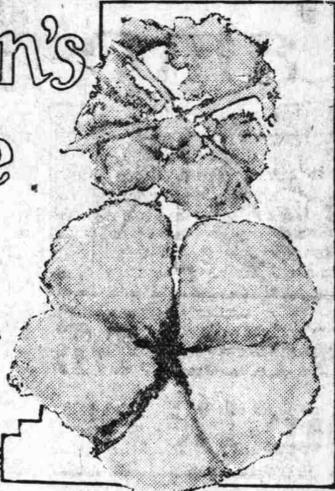


King Cotton's Worst Foe

By Robert H. Moulton



SEARCHING for a small, thin, rose-tinted, almost white caterpillar in 10,000 acres of Texas cotton land; confronted with the necessity of making certain that in all that area no single caterpillar made good its concealment in boll or stalk or leaves or grass or trash; forced to sweep every inch of the 10,000 acres as closely as a scrupulous housewife sweeps the kitchen floor and to sift every pint of the sweepings as carefully as a miser would sift dirt with gold nuggets in it—there is a task beside which the one of searching for a needle in a haystack appears simple and as requiring no patience worth mentioning.

But that is exactly what the United States department of agriculture, with the help of the state authorities of Texas did in the campaign for the elimination of the pink bollworm of cotton. It was done so successfully that not a single egg, larva, or moth of the pink bollworm appeared in 1918, a result that appears to justify the characterization of the job as the biggest successful entomological experiment of its kind in history.

When it was first found that the pink bollworm of cotton had gained a footing upon the soil of the United States, the consternation that resulted was hardly less than it would have been if the discovery had been made that German gunboats were coming up the Mississippi river. But the consternation was among agricultural scientists. The general public did not know the desperate danger. The scientists knew, however, that, unless checked, the little bollworm meant an annual loss of not less than \$50,000,000. If, indeed, it did not threaten the existence of the cotton industry, and their alarm was not materially lessened because the infested area was limited to small areas around Trinity Bay, Beaumont, and Hearne, Texas.

For the pink bollworm spreads, not by yards or acres, but by hundreds of miles at a leap. The chief agent of dissemination being man with his railroad trains, the distance from Texas to Georgia or North Carolina is no great jump, and it probably would not be a direct jump. The larva would be loaded into a car of cotton at Beaumont, say, shipped to New Bedford, Mass., and left in the litter at the bottom of the car, which would then go to Brockton for a load of shoes consigned to Atlanta, and would finally get swept out on some siding in the Georgia cotton fields.

And there it would begin anew the devastation that it has wrought in Egypt, India, Japan, the Philippines, Ceylon, the Straits Settlements, the Hawaiian Islands, Brazil, Mexico, and practically every cotton-growing country on the globe except the United States. It is the most destructive of all enemies of cotton, often reducing the yield of lint by 30 per cent and sometimes by more than 50 per cent, and greatly lessening the quantity of lint produced from the seed. In the Hawaiian Islands the cotton industry has been practically abandoned because of it, and wherever it has gone the industry has suffered terribly. That is why the department of agriculture, when the worm appeared in Texas, thought it worth while to undertake a campaign out of all proportion to the area infested.

The danger from the pink bollworm had long been recognized, and regulations were made by the government requiring the fumigation of all cotton from foreign countries before it could be landed in the United States. Every possible precautionary measure was taken, but there came one thing against which even the government could not guard. The great storm that ravaged the Gulf country in 1915 washed ashore around Trinity Bay, and possibly elsewhere on the Texas coast, great quantities of cotton lint and cotton seed.

Nobody gave any special thought to the matter at the moment, but when the next year the pink bollworm appeared all around the bay, it became apparent that some of the washed-up cotton must have come across the Gulf from the Laguna district of Mexico, where the pest had gained a footing some time earlier. That may not have been the only source of infestation, but it was the one that gave the greater part of the trouble.

An oil mill at Hearne had received some seed from Mexico in 1916, and the bollworm appeared in a few fields in the immediate neighborhood of the mill. The infestation at this point was entirely eliminated in short order, however, by uprooting and burning all scattered parts, the prompt milling and destruction of the seed, and the shipment to Europe of the harvested lint.

A mill at Beaumont, too, had received seed from Mexico and had violated its agreement to use it only for milling. It developed that some of this seed was sold to planters throughout a radius of 20 or 30 miles from the mill. Each sale was traced and the surrounding district included in the clean-up operations.

But it was the washed-up cotton infestation at Trinity Bay that developed the really alarming situation, involving more than 6,000 acres of cotton surrounding the bay, and it was there that the really big operations were undertaken.

A large force of experts and laborers—not less than 800 negroes—with the voluntary assistance of any number of farmers and members of their families, was assembled, camps were established, and the clean-up was begun on a thoroughly systematized plan that involved every inch of surface, to make sure that no lurking place was left for a larva to winter. All the cotton grown in this area was taken to Galveston under supervision and shipped to foreign countries. All seed was milled under the direction of government agents. The work ended with the whole area as clean as the top of a table.

The result, naturally, was awaited with much anxiety. In the spring of 1918 the entire area was watched. The planting of cotton was prohibited, and every stalk of volunteer cotton was pulled up and destroyed af-

ter careful examination. At the end of the season the reports of all the investigators showed that absolutely no evidence of the presence of the bollworm could be found.

But the success of the campaign will not be regarded as absolutely certain until two other summers have passed. In the meantime the quarantine will be rigorously enforced.

Prior to the discovery of the actual presence of the pink bollworm in Texas the state, taking precautions against its presence not far away in Mexico, had enacted legislation giving authority to establish a zone free from cotton culture on the border of Texas adjacent to Mexico. Since that time, quarantine and cotton-free zones have been declared in three areas.

The normal planting of cotton in the largest of these areas is about 50,000 acres and the inability to plant has, of course, entailed hardship on the planters. Individuals—137 to be exact—disregarded the law and planted some cotton, a total of a few hundred acres. Legal action was taken against them and they have since signed an agreement to bear all the cost of cleaning up their farms, under the supervision of government inspectors, and to leave the disposal of the cotton grown absolutely in the hands of the authorities.

It is interesting to note that a considerable number of these so-called outlaw cotton fields were discovered by aerial observation. Much of the country in the infested areas is heavily timbered. Roads are neither plentiful nor good in many places, and it was possible for an outlaw planter to tuck away a few acres of cotton in some nook of the woods beyond probability of discovery by ordinary means. This gave the inspectors of the federal horticultural board the idea of using airplane observers to spy out the hidden fields. The scheme worked admirably, the first flight alone revealing no less than seven outlaw cotton fields which had escaped discovery by all other means.

While a feeling of reasonable safety is justifiable as to the elimination of the bollworm from Texas, the danger of new infestation remains so long as the bollworm exists in Mexico, and, therefore, extreme vigilance will not be relaxed. All railway cars and other vehicles coming across the line are inspected, cleaned, and fumigated. The disinfection of cars and freight with gas from generators placed within the cars has been discarded as giving no security against insects that might be resting on the exterior of cars. Disinfection houses have been erected into which cars are run and disinfected both internally and externally.

The question is now raised: Has the recent Gulf of Mexico hurricane brought the pest again to the Texas shore? The storm ravaged the Gulf shore from Brownsville beyond to Key West. If the storm of 1915 brought the pest to the American shore from Mexico, why should not the same conditions now obtain?

Candid Criticism

An official of an insane asylum is a firm believer in the value of amusements on a deranged mind; and, being a good amateur comedian, he occasionally assists at an entertainment. The last performance was especially humorous; but one man in the audience sat through it with a grave and unimpaired countenance, a look of perceptible interest in his eyes. "It certainly is a remarkable state of affairs," he con-

fided to a visitor after the doctor had finished an amazing sort of highland fling, "a very remarkable state of affairs, when they shut me up here and leave him on the outside!"

In Holland, Too.
The typical Dutch housemaid in wooden clogs and multi-colored skirts has passed away to make room for a totally different kind of being. An Amsterdam lady engaged not long ago a new housemaid who stipulated that she should have two evenings a week

to enable her to attend rehearsals. Asked to explain, "Dientje" said that she was a member of the orchestra of the Concert Gebouw (the Queen's hall of Amsterdam), and needed leisure moments in which to practice Brahms, Spohr, Bach and Beethoven for the autumn concerts.—London Daily Express.

Chinese University Expands.
The Fukien University of Foochow is about to erect a million dollar group of buildings.

IMPROVED UNIFORM INTERNATIONAL SUNDAY SCHOOL LESSON

(By REV. P. B. FITZWATER, D. D., Teacher of English Bible in the Moody Bible Institute of Chicago.)
(Copyright, 1915, Western Newspaper Union)

LESSON FOR OCTOBER 26

A LESSON IN TRUST.

LESSON TEXT—Matt. 14:22-33.
GOLDEN TEXT—I believe; help thou mine unbelief.—Mark 9:24.
ADDITIONAL MATERIAL—Mark 5:22-24; 35-43; Luke 17:13-23.
PRIMARY TOPIC—Help in the storm.
JUNIOR TOPIC—Jesus comes to the help of his disciples.
INTERMEDIATE TOPIC—Help when most needed.
SENIOR AND ADULT TOPIC—An ever-present helper.

The storm-tossed disciples on the sea at night is an example of the struggling followers of the Lord in the darkness of the present age, as they are tossed by the tempests of the evil one.

I. The Disciples on the Storm-tossed Sea (vv. 22-24).

1. They were sent across the sea by Christ (v. 22). Doubtless his reason for this was to keep them from entanglement in the movements of the people to make him king, for in John 6:14, 15 it is shown that the people were so excited by the feeding of the five thousand that they were about to make him king by force. Though they were somewhat unwilling to go, it was a mercy for him to constrain them.

2. Christ dismissed the multitude (v. 22). This may be taken as typical of his rejection of the nation whose rulers had already rejected him.

3. Christ praying alone in the mountain (v. 23). Temptation to earthly honor and power had come to him, therefore he went to the Father in prayer for relief and strength. The need of prayer is greatest at such times. While his prayer was in part for himself, yet it was for his disciples. According to Mark 6:48, he saw from the mountain top the disciples toiling on the storm-tossed sea. We are never out of his sight as we struggle against the storms of life, and he ever lives to make intercession for us.

II. Jesus Walking on the Sea (vv. 25-27).

1. It was in the fourth watch of the night (v. 25). He did not come to them immediately, but waited till almost dawn. It was, however, the darkest part of the night, and physical danger was great, but their perplexity of mind was greater. They knew that the Lord had sent them, but why should they be in such straits if he sent them? A stormy sea is no evidence that we are not in the Lord's appointed way. The disciples' concern should be to obey the commands of the Lord, being assured that while doing his will he will protect them.

2. The disciples alarmed at his coming (v. 26). It was the coming of their best friend to deliver them from danger. He comes to us today in such ways that sometimes we are frightened.

3. Jesus' words of comfort and good cheer (v. 27). In the midst of their distress they heard the Master's words, "Be of good cheer; it is I, be not afraid." This changed their fear into joy.

III. Peter's Venture and Failure (vv. 28-33).

As soon as Peter recognized the voice of Jesus he cried, "Bid me come to thee on the water." Jesus said, "Come." Peter obeyed, and for a time he walked upon the waves without sinking. His simple faith linked him with divine power and he was upheld; but as soon as he took his eyes off his Lord and considered the raging sea he began to sink. If we will but keep our eyes on the Lord instead of the waves we can outstride the storms of life. When Peter began to sink, he did the sensible thing; he cried to the Lord for help. Jesus reached forth his hand and saved him. He has never lost one who honestly cried for help. When Jesus entered the ship the wind ceased. The people worshipped him as the Son of God. No ship can go down with Jesus on board.

Hath Not Where to Lay His Head.

People are to be pitied who have no home. John Howard Payne in Paris, homeless and miserable, uttered the universal longing of the human heart when in a cold and dreary garret he wrote the words of "Home, Sweet Home." There are many people in the world who are driven from pillar to post, and who can say of no spot on earth, "This is my home." Think particularly of him who had come from his Father's House to this inhospitable earth and who said, "The foxes have holes, and the birds of the air have nests, but the Son of Man hath not where to lay his head."

Sublime Sentiment.

"Beware," said Lavater, "of him who hates the laugh of a child." "I love God and little children," was the simple yet sublime sentiment of Richter.—Mrs. Sigourney.

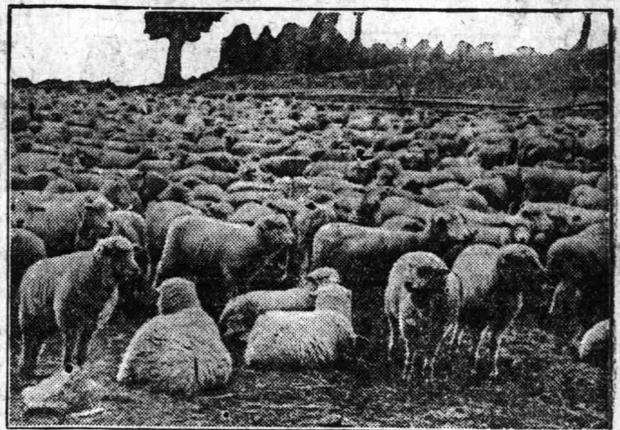
The Heart of the Believer.

The heart of the believer is the home of God. The church of the Lord Jesus is his holy temple. He dwells here by his Holy Spirit, and makes known through the church, to the principalities and the powers in the heavenly places, his manifold wisdom. This is a superlative honor. It brings with a supreme obligation.

One Thing at a Time.

The shortest way to do many things is to do only one thing at a time.—Cecil.

TENNESSEE LAMB AND WOOL MARKETING CLUBS NOW IN SUCCESSFUL OPERATION



Sheep Are Prize Mortgage Lifters When Well Managed.

(Prepared by the United States Department of Agriculture.)

Lamb and wool marketing clubs have been in successful operation in Tennessee for more than 25 years. They were the outcome of unsatisfactory marketing conditions in the lamb-producing sections of Tennessee. The plan originated at Goodlettsville, where there is a club with a membership of 50 persons living within a radius of three miles from the shipping stations, and its success has prompted farmers in other sections to organize in a similar manner.

The organization of these clubs is comparatively simple. The officers consist of a president and a secretary-treasurer, who, with three other members, form an executive committee, the chairman of which is the secretary-treasurer. The annual meeting for the election of officers is held early in the spring, that each member may report the number of lambs and the amount of wool that he will have to sell.

Sold to Highest Bidder.

The secretary-treasurer advertises for sealed bids on the lambs owned by the club. The advertisement indicates the number, grade, and quality of the lambs and the date shipment will be made. The lambs are then sold at the shipping point to the highest bidder, the executive committee reserving the privilege of rejecting all bids in case they seem too low. On the shipping date the executive committee is on hand to grade the lambs

brought in by each farmer. All lambs not up to the advertised standard are returned to the farmer, who either holds them over for some future shipment or sells them at a sacrifice. This has the beneficial influence of training the owners to deliver only those lambs which will come within the grades advertised by the committee.

The day for the wool sale is advertised, that bidders may be on hand to see the fleeces, which are graded into No. 1, clear; No. 2, slightly burry; No. 3, burry; and No. 4, hard burry. Each grade is weighed, and sealed bids are received by the committee, which also reserves the privilege of rejecting all bids.

All Share Equally.

The farmer who owns a small flock of ewes has the same advantage in marketing his lambs as the large producer. Expenses are made proportionate and all receive the benefit of competitive bids. The results are seen principally in the better prices obtained. It is stated freely that the club members receive from \$1 to \$2 a hundredweight more for lambs of the same grade and 2 cents per pound more for wool than farmers in the community who have not the benefit of co-operative selling. The members are encouraged to follow uniform methods in breeding and handling their flocks, with the result that the clubs have an established reputation in many of the large markets for the uniformity and high quality of their lambs and wool.

COMPLAIN AT PRICE OF ACID PHOSPHATE

Figures Quoted by Manufacturers Are Too High.

Strikes and Car Shortage in Florida and Tennessee Fields Have Combined to Reduce Production and Shipments.

(Prepared by the United States Department of Agriculture.)

The United States department of agriculture has received numerous complaints regarding the price of acid phosphate as compared with the prices of mixed fertilizers. The price quoted by manufacturers during the spring of 1919 to dealers or individuals ordering 30 tons or more was \$24 a ton f. o. b. Baltimore, Philadelphia and Carteret. The price asked for the fall trade is \$22.50 a ton.

It will be recalled that the department on June 7 issued a statement to the effect that farmers should be able to obtain mixed fertilizer in the fall of 1919 at prices approximately 30 per cent lower than those which prevailed in the spring. This statement was based upon information that had been obtained from manufacturers, but it was expressly stated that the price of acid phosphate was being further investigated. Obviously, the price of this material has not decreased by 30 per cent, and the department, in letters to manufacturers, has expressed the view that the prices quoted above are too high.

It has also advised all acid phosphate manufacturers that in the future it will require them to base the price of straight acid phosphate, as a separate commodity, on the actual cost of the materials of manufacture and sale, plus a reasonable profit, and that the cost of manufacturing mixed goods must not be prorated on that portion of the acid phosphate which is sold as such.

Since the prices of acid phosphate were indicated to the department by the fertilizer manufacturers, the prices of crude acid phosphate have advanced to such a point that the dry mixers, who buy the crude material, crush, mill, screen, and bag it, complain that they can not handle it with a profit at the price they had agreed to sell it for. Strikes in Florida and car shortages in both the Florida and Tennessee fields have combined to reduce production and shipments. The department has laid the situation fully before the railroad administration and has urged that sufficient cars be made available for fertilizer deliveries in the interest of crop production.

It has also notified the phosphate miners and the acid phosphate manufacturers that the present prices of rock phosphate, or of acid phosphate, must not be advanced without submitting the proposed increases to the de-

partment, accompanied by specific data showing any real and unavoidable increase that may have occurred in the costs of production. Such increase in costs, in the opinion of the department, would be the only possible justification for any advance in the prices that prevailed in June. The department holds that a mere shortage of supply in the existing circumstances is not in itself a sufficient justification for increased prices.

GOOD COVER FOR HAYSTACKS

Ample Protection Afforded by Layer of Coarse Grass, Such as Millet, Sudan or Sorghum.

(Prepared by the United States Department of Agriculture.)

High price of hay makes it essential that farmers top off their haystacks with proper covers for protection of the dry forage against weathering. A cheap and simple cover for any stack or rick of hay may be made by spreading a layer, about four inches thick, of some coarse grass, such as millet, sudan grass, fine sorghum, or some coarse wild grass over the top of the stack or rick, placing long poles over the hay, and then binding these poles permanently in place by the use of wires weighted down at both ends. Where the hay is stacked out of doors in oblong ricks, a satisfactory cover may often be made by using 12-inch boards 1 to 1½ inches in thickness, cut as long as the rick, which may be wired together and lapped like shingles to form a satisfactory cover over the hay. Some farmers have been successful in using crimped galvanized roofing or corrugated roofing with the edge bent to interlock in the same manner as a protection for hay-ricks.

LIVE STOCK NOTES

Old sows farrow heavier pigs than young sows do.

Alfalfa is a great feed for the brood sow in summer and winter.

Alfalfa provides a large amount of nutriment for every kind of stock.

Horse kindness: Load lightly and drive slowly. Stop in the shade if possible.

Give the colt plenty of room in which to stretch his legs, but better not let him follow into the field.

Fresh air and sunlight combat disease in the stable. Dairy barns should be airy barns. Ventilation is conservation.

Hogs should be supplied with suitable green forage and so managed as to consume as much of it without waste as possible, since forage is by far the cheapest feed that can be used.