

### A PIOJO BLANCO QUARANTINE

Peru needs to guard against the spread of this insect southward from Piura through the other cotton districts of her coast region. All the ports of the Peruvian coast south of Sechura should exercise a rigid quarantine against all the ports from Sechura to Panama, both inclusive, so far as plant importations are concerned. The piojo blanco exists in practically the whole west coast region from Panama south to Sechura, and infests a very great variety of plants. It may therefore be very easily brought to the uninfested region south of Sechura on almost any plant shipped from ports in the infested region. All plants entering Peruvian ports to the south of Sechura, arriving on vessels of whatsoever description from the north, should be subjected to the most severe scrutiny by competent persons, and if any scale of any kind is found on them, such plants should be completely destroyed. If they are merely scrubbed with insecticide and allowed to enter, the chances are ninety-nine to one that some of the microscopic young of the scale will escape the treatment and establish the plague at the port entered, whence it will later spread to the surrounding districts. The possibility of the piojo blanco gaining access to the cotton districts of the central coast region of Peru constitutes a most serious menace to the whole Peruvian cotton crop. While it is quite certain that the insect could not prove so injurious in the central coast region of Peru as it has in the Piura region, owing to the much greater atmospheric humidity prevailing in the former which would keep its enemies active during a greater part of the year, nevertheless its damage would quite certainly reach at least 20 per cent in any part of that region. It thus constitutes an impending menace, against which it behooves the Peruvian Government to guard to the limits of its ability.

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### A SUCCESSFUL TRAP FOR COCKROACHES

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Mr. S. A. Graham of this Division has devised a simple trap for catching cockroaches, which works most successfully.

We have personally tried various contrivances on the market and others of our own devising, but find Mr. Graham's trap far better than anything we have met with. It consists of a flat-bottomed water flask, as shown in the accompanying drawing, in the mouth of which is introduced a paper cone (see illustration). This cone is held in place with a little vaseline smeared around the inside of the neck of the flask. The opening at the smaller end of the cone is  $\frac{3}{8}$  of an inch in

diameter. It will be noted that a similar cone is placed in position within the larger one, the diameter of the small hole in the inner cone being the same as the smaller opening of the large cone. Both of these openings should be large enough for roaches to pass through easily. One side of the inner cone is glued to the outer cone.

In setting a trap a little banana is smeared around the inside of the cone as an additional attraction to the insects. A number of human hairs were glued, in some of our trials, to the inner cone at the smaller end (see illustration), but repeated trials indicate that these are unnecessary and add to the complexity of the otherwise simple trap.

The following baits were tried:

1. Milk—this worked very well in the dairy building, but gave poor results in other buildings.
2. Liquid chocolate gave poor results.
3. Banana peel; by far the most attractive, giving the best results of any baits tried.

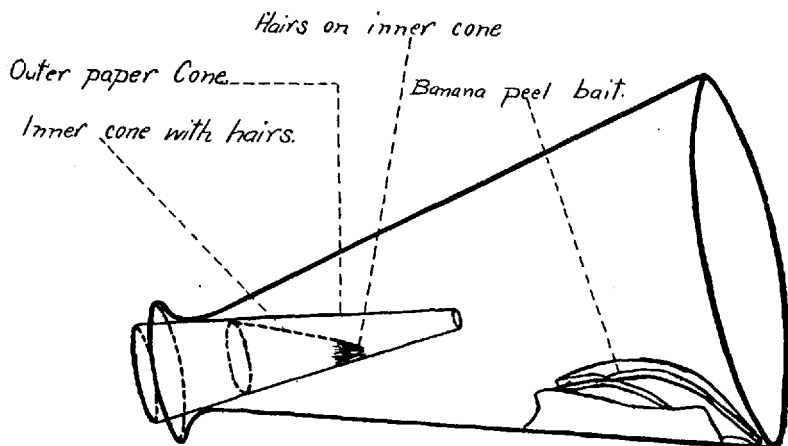


Fig. 4. Graham roach trap (original).

We took occasion to compare this simple trap, which we propose to call the "Graham Cockroach Trap" with the Hodge Fly Trap, which frequently catches roaches. The Graham Trap is superior to this for many reasons.

In the first place the Hodge Fly Trap has the bait outside of the actual trap, that is in the bait pan below the cone and its opening, so that a roach might crawl back (not seeking the light above as flies do) outside of the pan and make its escape; whereas, in a Graham Trap the bait is inside and the roach has to enter the trap before feeding. It is somewhat difficult for roaches to escape from the Graham Trap when once inside, which is clearly evident from observing its construction.

Very young roaches can pass through the wire mesh of the Hodge Fly Trap.

The statement is made above that the hairs appeared to be unnecessary. We found by observation that when the Graham Trap is placed in a secluded part of the room frequented by roaches, where it is not likely to be disturbed, there is little or no effort on the part of the insects to escape and the trap can be left unattended for possibly several days; on the other hand, if the trap was placed where light reached it in the morning and there was more or less activity and noise near it, the insects escaped under those conditions and the hairs made it somewhat more difficult for them to get out. Very few adult roaches are caught in the day time, but nymphs of all sizes enter the trap, apparently at all hours of the day.

We append some of the catches, indicating what the Graham Trap accomplished:

March	22	In 2 hours	30	Nymphs captured in Graham Trap.
"	24	" 5 "	5	Adults and 16 young.
"	24-25		25	" " 15 "
"	25	" day time	5	" " 17 Nymphs—different stages.
April	1		19	" " 5 "
		In another Graham Trap same day	40	Adults and 12 Nymphs
		Under Sink	10	" " 1 "Silver Fish"
		The last three traps were set over night		
April	14		14	" " 44 Nymphs
"	10		5	" " 54 "

It occurred to the writer that, in view of the lack of success with many traps and the very marked success with the Graham Trap, the above was worthy of record. That the Hodge Fly Trap is useful in this connection, however, is evidenced by observations on the part of Mr. Williamson of this Division, upon two traps, baited with milk which was frequently renewed, placed in the kitchen of a steam-heated flat. The results are shown in the following table:

Trap I 1912			Trap II 1912		
Nov.	4-6.....	28	Nov.	15-17.....	12
"	6-8.....	30	"	17-19.....	12
"	8-10.....	25	"	19-26.....	17
"	10-12.....	26	"	26-29.....	14
"	12-14.....	19	"	29-Dec. 4.....	6
"	14-17.....	20	Dec.	4-5.....	16
"	17-18.....	11			
"	18-19.....	11			
"	19-26.....	26			
"	26-29.....	9			
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Total 25 days.....			205		