

# The Cliveden Valentines

If you've laughed over Pankhurst's and Price's portraits, shown here, you'll laugh more heartily when you read this funny complete story.—Your Editor.

By Charles Hamilton.



## The 1st Chapter. Poindexter's Valentine.

**P**OINDEXTER! Dick Neville put his head in at the doorway of No. 4 study at Cliveden, and rapped out the name of his American chum.

"I say, Poindexter!" Lincoln G. Poindexter was seated at the table, bending over it pen in hand, and seemed to be so completely absorbed by his occupation that he did not even hear Neville call. His head rested on his left hand, his left elbow on the table, and his whole attitude was one of deep and intense absorption.

"Puntdodger!" called out Dick, staring at him. "I say, Poindexter! Can't you hear me, Plankplunger? Have you gone deaf or dotty, Pinkpointer?"

Dick Neville's voice rose, and his variations on his American chum's name became more weird; but Lincoln G. Poindexter took not the slightest notice of his hail.

It was certain that the American chum heard him, but was too busy to look up, and Dick wondered what on earth could be the work he was engaged upon.

It was not time for preparation, and besides, prep. had never been known to hold a junior so spellbound. It was not an imposition, for he was doing very little writing. He had a pen in his hand, but was spending most of the time chewing the end of it.

"Sure, and isn't the bounder coming?" demanded Micky Flynn, stumping along the passage, and giving Dick Neville a hearty slap on the back which made him jump.

"You ass! You've nearly busted my spine!" howled Dick.

"Well, you ought to have it quite busted for keepin' a descendant of the ancient kings of Ireland waitin', ye gossoon!" grinned Micky Flynn. "Sure and why don't ye bring Punt-dodger at all, at all?"

"I can't make the beast hear; but I'll jolly soon wake him up."

Dick Neville strode into the study. His face was wrathful. He grasped Poindexter by the shoulder and gave him a shake.

"Have you gone off your rocker, you tinned beef lunatic?" he demanded.

Poindexter grinned slightly, but did not look up.

"Puntbuster!"

"Don't worry me," said the Chicago chum at last. "Can't you see I'm busy?"

"What the dickens are you busy about?"

"I guess I'm writing a valentine."

The chums of No. 4 study gave a start. Dick's face cleared, and Micky Flynn gave a whistle.

"Sure and I'd forgotten Valentine's Day!" exclaimed Flynn. "How did ye come to think of it, Puntbuster, darling?"

"I guess if I didn't think of things in this study there would be precious few things thought of at all here," grunted Poindexter. "How you fellows ever got on before I came to Cliveden is a mystery to me. If I hadn't thought of this Valentine Day business, Pankhurst and Price would have got ahead of us."

"Blessed is he that bloweth his own trumpet," grinned Dick Neville. "Still, it's lucky you thought of it, Puntbuster. What sort of a valentine are you writing?"

"I guess there's a proverb that fools and children should never see work half done."

"Sure and ye've busted that proverb by lookin' at it yourself," said Micky Flynn. "Let us see the valentine. Anything about tinned beef on it?"

"Oh, go easy with the tinned beef!" said Poindexter, who—his father being in the Chicago canning trade—was not always pleased by references to the mysterious things exported in tins from Chicago. "Here's the valentine!"

Dick and Micky looked at it, and burst into a roar.

As our readers know, the Cliveden Combine—Neville, Flynn, and Poindexter—were on deadly terms of warfare with Pankhurst and Price, who gave themselves the honourable title of the Old Firm. Pankhurst and Price, the red-headed chums of No. 10 study, who were to be the

recipients of Poindexter's valentine, were not likely to be in any doubt as to whom it was meant for. Poindexter, with some artistic skill, had sketched in two ungraceful figures in Etons, and, with a brush dipped in red ink, had daubed the hair a brilliant red.

He was writing a verse under the figures when his chums interrupted him, but poetry was apparently not in the line of Lincoln G. Poindexter, for he had written only one line, and had already chewed nearly an inch off the handle of his pen without getting any further.

Dick Neville read the line out, looking over his shoulder.

"There are two kids called Pankhurst and Price—"

"Sure and that begins all right," said Flynn. "It will make a limerick, if you can finish it."

"That's the worst of it," grunted Poindexter. "I guess I can't get on with it. Poetry isn't much in my line."

"No, I suppose not. When there's any thinkin' to be done," said Neville, "it's no good cudgelling your brains; better ask me at once."

"Oh, seat! Can you think of anything?"

"Let's put our heads together," said Neville. "Ow! What on earth are you doing, Flynn?"

Micky had made a sudden bend forward, and brought his hard bullet head against Dick's. Neville rubbed his cranium in pain and amazement.

"Sure and you said we were to put our heads together," said Micky innocently. "I was only obeyin' orders."

"You—you funny animal! I'll—"

"Oh, don't begin ragging now!" exclaimed Poindexter. "I guess we've got to get this valentine finished."

"Righto!" said Dick, screwing up his forehead in a great effort of thought. "There are two kids called Pankhurst and Price, Whose manners aren't very nice—"

"Oh, the giddy feet!"

"Well, you can pad out that line. 'There are two kids called Pankhurst and Price, Whose ways are exceedingly nice—'"

"But that's not what we want to say."

"By Jove, so it isn't! 'There are two kids called Pankhurst and Price—'"

"Sure, and I've got it!" exclaimed Micky Flynn excitedly. "Who were licked in a race on the ice."

"Good!" exclaimed Poindexter.

"I don't know," said Neville thoughtfully.

"The rhyme's all right, but isn't it a little bit—"

a little bit bragging, to refer to licking them in the skating match?"

"Well, I guess that's so; but you see poets have to be governed by the exigencies of rhyme."

"The what?"

"The exigencies of—"

"Well, that's a good word, anyhow."

"The exigencies of rhyme," repeated Poindexter firmly. "Poets often mean to say one thing, and then say another, because it sounds better. I believe that's what they mean by poet's licence. Anyway, if there isn't another rhyme, Micky's line will have to do. See if you can get on with it."

"Wait a bit. How would this do? 'There are two kids called Pankhurst and Price, Who both keep white rabbits and mice—'"

"You ass! There's no slanging them in that! In a verse on a valentine you have to slang them."

"H'm! I suppose so."

"Sure and here's another: 'Who've been licked to the wide once or twice!'" exclaimed Micky Flynn.

"That's better," said Poindexter. "I'll write that down, and we can leave the other rhymes over for the last line."

"What are you writing like that for?" asked Neville, as he noticed that Poindexter was trying to disguise his writing and making a terrible scrawl of it.

The American chum smiled in a superior way.

"You never let anyone know whom the valentine comes from," he said. "They won't know this is my writing."

"But will they know it is writing at all?"

"I guess—"

"They might take it for the footsteps of a fly which had got nearly drowned in the ink."

"Ha, ha, ha!"

"Oh, don't cackle, Micky!" said Poindexter. "Get on with the washing. 'There are two kids called Pankhurst and Price, Who've been licked to the wide once or twice—' That's very moderate, as we've licked them lots of times. But what about the next lines?"

Dick Neville rubbed his forehead hard, as though to set his brain working, but the result was apparently not worth the effort, for he had nothing to suggest.

"It has sometimes been said, that their head is quite red," said Micky Flynn. "How's that for high?"

"It hasn't been sometimes said; it's been always said," remarked Poindexter. "It has always been said that their hair is quite red—"

That doesn't sound like real poetry. We must find something better than that."

"I know," said Neville. "Their hair is quite red, and will remain so till they're dead—"

Poindexter snorted.

"Well, then: 'Their hair is quite vivid, about which they're chivvied—'"

"Ha, ha! That sounds rather 'funny.'"

"Sure and so it does intoirly. Then the last line—"

"I've got it," said Poindexter, and he wrote rapidly on the valentine. The whole limerick now ran as follows:

"There are two kids called Pankhurst and Price, Who've been licked to the wide once or twice; Their hair is quite vivid, About which they're chivvied; But really the colour is nice."

"By Jove, that's ripping!" said Neville. "I said that if we put our heads together we— Keep off, you Irish maniac! It's all right, Poin."

"I should just guess so."

"How are you going to post it?"

"Oh, drop it into the school letter-box in the usual way, you know. It will be collected and delivered here to-morrow morning."

"Good. Now come out for a little run."

And the Combine, well satisfied that the valentine would take a rise out of the Old Firm, put it carefully into an envelope, and quitted the study.

## The 2nd Chapter. Philpot is Disturbed.

**P**ANKHURST and Price, the Combine's rivals in the Fourth Form at Cliveden, strolled along the passage to the junior common-room. The auburn-haired chums of the Fourth were looking in a beaming good humour.

They had come in and cleaned down after some hard football practice, and were feeling in a glow of health and spirits, and the colour in their cheeks almost matched that in their hair.

"Isay, Pricey," Pankhurst remarked. "Has it occurred to you what to-morrow is?"

"The fourteenth of Feb—"

"Ass! I don't mean the date—don't you know it's Valentine Day?"

"Is it?" said Price. "Yes, so it is. Quite so. What about it?"

"Well, people usually send valentines to each other on St. Valentine's Day," said Pankhurst. "At least, they do sometimes. I've been thinking whether we could work up something comie for these bounders in No. 4 study."

"Good wheeze!"

"Something with tinned beef in it," grinned Pankhurst. "The idea is good, and as they haven't thought about the date, it will make them wild for us to get ahead of them. Let's get into the common-room and sketch something out before tea. Come on. I'll race you."

"Right you are."

The Old Firm broke into a run. At the same moment M. Friquet, the French master at Cliveden, came round the corner of the passage. M. Friquet had a knack of always turning up in the wrong place; and he was decidedly in the wrong place now, looking at it from the point of view of his comfort. Pankhurst and Price bolted straight into him, and sent him spinning.

"Mon bleu!"

The Frenchman gasped in amazement as he was hurled back against the wall. Pankhurst reeled from the shock, and fell over, and Price tumbled over across him. The Frenchman regained his balance and stared down at the sprawling juniors wrathfully.

"You—you young rascals!" he exclaimed. "How dare you dash viz yourselves along ze passage like ze wild horse? Take feefy lines each."

"Oh, mossos!" exclaimed Pankhurst, scrambling to his feet.

"I say take feefy lines."

"It was quite an accident, sir."

"If it had been done on ze purpose, Pankhurst, I would take you to ze Head to have ze severe flogging."

"Yes, sir, but as it was an accident—"

"Vun hundred lines!" exclaimed M. Friquet. "And if you speak vun ozzer word I will make it two hundred viz you!"

Pankhurst and Price were silent with dismay.

The Frenchman, tenderly caressing his well-filled waistcoat, walked on slowly, and the Old Firm stared at one another.

"Well, that's rotten," said Pankhurst. "A hundred lines each! Wonder when I shall get mine done! I owe Lanyon fifty already."

"Quite so," gasped Price.

"As a matter of fact, it was rather clumsy of you, Pricey—"

"Why, it was you who ran over mossos; I only fell over you!" exclaimed Price.

"Well, it can't be helped, anyhow," said Pankhurst. "We can't do the lines now; we've got that valentine to do. My hat! I've a good mind to send mossos a valentine instead of the lines, but it's not good form to valentine a master. Come on."

The chums walked on to the common-room, but at a more moderate pace this time. The room seemed to be empty as Pankhurst glanced in, the tea bell having rung. Most of the Fourth Form at Cliveden had tea in their own studies, and those who did not were gone to the hall. Just as Pankhurst stepped into the room, he saw that there was one occupant, a junior, who was busily writing at a table near the fireplace.

"Halle, Philpot," said the chief of the Old Firm.

The junior at the table started violently, and



"I repeat, sir, that I did not send it. I should have thought," went on Poindexter, his voice rising with indignation, "I should have thought, sir, that everybody here might have known me better than to think me guilty of such a dirty action."

catching up the paper he had been writing upon, thrust it swiftly under his jacket.

He had evidently deemed himself in no danger of being disturbed in the room at that hour, and was startled by Pankhurst's entrance.

Pankhurst stared at him in astonishment. "H. lo! What's the matter?"

Philpot, the cad of the Fourth Form, turned very red. He had hastily crammed the paper into his bosom, in the evident fear that it would be seen. But why he should desire to keep it such a secret was a mystery, and the Old Firm was amazed.

"What's on?" asked Pankhurst. "What have you got there?"

"N-n-nothing."

"N-n-nothing!" said Pankhurst. "Then you're taking a lot of trouble to keep n-n-nothing from being seen."

"It's no business of yours."

"Exactly so, my son; that is, of course unless you have found my cheque-book," said Pankhurst gravely, "and are forging my name to a cheque for a thousand pounds. Are you doing so?"

"Don't be an ass!"

"Well, you see, I left my cheque-book on the grand piano in my study, and—"

Philpot, with a scowling brow, left the room. Pankhurst gave a whistle.

"That rotter is always up to something mysterious," he exclaimed. "I wonder what is the little game this time. The Cliveden sweepstake was his last wheeze, but he burnt his fingers over that, and so did Grahame. I shall never trust that young rotter."

"Quite so."

"Well, I suppose it doesn't matter to us; let's get to work on the valentine. But—my only hat!" Pankhurst broke off suddenly.

Price stared at him.

"What's biting you?" he asked.

"Why, I know what that kid was doing. Of course, to-morrow's Valentine's Day, and he knows it as well as we do. Savvy?"

"Yes, by Jove; he was writing a valentine."

"That's it; and he hid it from us because—"

"Because he didn't want us to see it."

"Ass! Because he's going to send it to us."

"I shouldn't wonder!"

"Wouldn't you really? It seems to me as plain as your face, and goodness knows that's plain enough."

"Quite so—I mean—I—"

"Ha, ha! Never mind; if we get a funny valentine to-morrow we shall know who sent it, and if there's anything we don't like in it, we'll make him eat coke. Now let's get to work on ours while we've got the room to ourselves."

And the Old Firm were soon busy with pen, ink, and paper.

### The 3rd Chapter.

#### St. Valentine's Day at Cliveden.

THE bell was ringing, and the Fourth Form at Cliveden were coming in to breakfast on the morning of St. Valentine's Day.

The Combine were all smiling, as if in high good humour. Their valentine to the Old Firm had been duly addressed and posted the previous day, and—as the juniors at Cliveden were allowed to receive letters uninspected—that valentine would be lying beside the plate of Pankhurst.

Pankhurst and Price were also grinning. They apparently had some amusing thought in their minds, too. Had the Combine or the Old Firm noticed it, there was a lurking grin on the face of Philpot, too.

The Fourth Form took their places. M. Friquet, who took the foot of the table—Mr. Lanyon, the Form-master, taking the head—glanced at an envelope beside his plate. M. Friquet sometimes received letters from his native land, but few from nearer at hand, and he was slightly surprised to see the local postmark on the letter.

Philpot was looking covertly at the French master, and he grinned as he saw M. Friquet take up the letter.

Poindexter glanced across the table at him.

"Hallo, Philly! Wherefore the expansive grin?" he asked.

Philpot started.

"Why grinnest thou?" asked Dick Neville.

"What mean trick have you been playing upon your best chum lately, Philpot?"

"Mind your own business."

"Silence, there!" came Mr. Lanyon's voice from the top of the table.

But Poindexter was still looking curiously at Philpot. There was something in the look of the cad of the Fourth which warned him that Philpot had some kind of mischief in his mind. Exactly what he had been doing it was impossible to say, but the glimmer of ill-natured mischief in his narrow eyes was not to be mistaken.

Dick Neville tapped his chum on the arm.

Poindexter glanced at him.

"There's a letter for you."

"Thanks; I never noticed it."

Poindexter picked up the envelope. It was addressed in a scrawling hand, evidently disguised, and it was bulky. It did not need much keenness to guess that it contained a valentine.

"Sure, and let's see what's in it, darling," murmured Micky Flynn. Dicky and I are left out in the cold, but I daresay that is intended for all three."

Poindexter nodded, and opened the sheet inside the envelope, and spread it on the table. Then he uttered an exclamation.

Micky and Dick were looking on from either side of him, and at the sight of the valentine they gave an irrepressible yell of laughter.

Poindexter turned red. Mr. Lanyon rose at the head of the table.

"If you juniors cannot keep silence—"

"Ha, ha, ha!"

"Do you hear me?"

"Ha, ha, ha!"

"Neville—Flynn!"

"Sure, and I'm sorry, sir!" exclaimed Micky Flynn, wiping the tears of mirth from his eyes.

"It's so funny, sir."

"What do you mean, Flynn? What is funny?"

"Sure, and it's—"

"It's a valentine, sir," said Neville. "It was so funny that we had to giggle. We're sorry, sir."

"Indeed! Pass the valentine up the table!"

Poindexter hesitated.

"Pass it here!" cried Mr. Lanyon sharply.

The order was obeyed. The valentine went up the table, the boys on both sides craning to see it, and yells of laughter rising which rang through the whole hall, and attracted general attention from the other tables.

Mr. Lanyon, his brows knitted, received the

valentine. As he looked at it his brow unbent and his face relaxed more and more till something like a smile appeared upon it. The smile deepened and grew into a laugh.

"Ha, ha, ha!"

The whole table was in a roar, and no wonder! The valentine represented a pile of tinned-beef tins, with the brand of Chicago upon them.

They were really very neatly done, and the labels on the tins were coloured, so that the effect was very good. On every label appeared the name of Poindexter. It was well known throughout Cliveden that Cyrus K. Poindexter had made his fortune in the Chicago canning trade—a fact that Poindexter junior was never allowed to forget.

Underneath the picture came the joke, in the shape of the following inscription: "Picturesque America: View of the Chicago Dog's Home!"

Poindexter was crimson. He had taken so many jokes on the subject of canned beef that he had grown used to the topic, but to have it suggested that the beef-tins turned out of the Poindexter factories formed the last resting-place for the stray dogs of Chicago, was, as he would have put it, "rather thick."

But Neville and Flynn were yelling, and the whole table was in a roar. Mr. Lanyon, laughing, passed the valentine back to Poindexter along the table. The American chum crumpled it and put it in his pocket, and shook his fist at Philpot, who was cackling away across the table for all he was worth.

"So that's your little joke, is it, you rotter?" muttered Poindexter.

"Ha, ha, ha!"

"You must be silent, boys," said Mr. Lanyon.

"No more letters must be opened at the table. You hear me, Pankhurst? Take them out with you after breakfast, and open them where you are at liberty to make as much noise as you please. My dear Monsieur Friquet, what is the matter?"

Pankhurst unwillingly put his letter, which he had not opened yet, into his pocket. It's bulk showed that it was a valentine, and he attributed it to Philpot without even looking at it, remembering the scene in the common-room the previous day.

But Mr. Lanyon's words drew general attention to M. Friquet. The French master had not joined in the mirth which had followed the production of Poindexter's valentine.

He had opened his own letter, and was staring at a valentine himself; and, from the expression of his face, he found it far from gratifying.

"M. Friquet!"

The Frenchman looked up. There was an expression of deep pain on his face, and a glimmer of moisture on his eyelashes.

"Who sent this valentine to M. Friquet?"

There was no reply. Mr. Lanyon's eyes seemed to fix themselves upon Poindexter, but the American met his glance calmly.

The Form-master was almost pale with anger. "Boys!" he exclaimed, "a valentine has been sent to M. Friquet—not merely a comic one, but one brutally insulting. The sender shall be severely punished. Who was it? Let the guilty boy speak up at once."

There was silence along the Fourth Form table. The juniors realised that the matter was growing serious. The silence was broken by Pankhurst.

"Did you say that an insulting valentine had been sent to M. Friquet, sir?" he asked, standing up in his place.

"Yes, that is what I said."

"Then may I ask, sir, why it should be supposed that a boy in this Form sent it?" said Pankhurst.

"If the letter came by post, it may have been a fellow in any other Form in the school, or somebody from outside the school altogether."

"Quite so," said Price.

"That point is well taken, Pankhurst," said Mr. Lanyon quietly. "And I only hope it may turn out that the delinquent is not in the Form under my charge. But I have grave reasons to suppose that the guilty party is here."

### The 4th Chapter.

#### Was It Poindexter?

WHO sent this valentine to M. Friquet?

Mr. Lanyon's voice rang out angrily. It was seldom that the good-tempered master of the Fourth was really angry; but he was angry now.

The Fourth-Formers looked at one another. Someone had sent a comic valentine to M. Friquet, and though it was not considered a form, still, it was only a joke, and they were surprised that Mr. Lanyon should make so much of it.

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(Continued on the next page.)



An Exercise for hips, ankles, and knees.—(See Article below.)

## Are You Healthy and Strong?

If you Suffer with any Physical Defect you Should Read these Grand Articles.

### Leg Exercises.

ONE of my young friends asks me for an exercise to strengthen the muscles of the toes, ankles, and hips. Here are several:

1. Stand as upright as possible, with the feet firmly planted together; place the hands upon the hips, then, rising gently on the toes, bend the knees, gradually lowering the body until the back of the thighs touch the heels. Now extend the arms in front, and fall slowly forward, the object being to rest on the tips of the fingers and toes. Return to attention.

2. Having your feet close together, the body perpendicular, the arms raised and the palms of the hands turned outwards, bend the body forward from the hips, keeping the knees perfectly rigid, and attempt to touch the toes. This will not be easy at first.

3. Cross the feet, place the hands on the hips, and then, bending the knees, allow the body to gradually fall into a sitting position on the floor. Rise again, without disturbing the position of either the hands or feet.

Our illustration shows another good leg exercise from which great benefit may be derived. Stand at attention, and then thrust the arms out in front, with the palms together. Now raise the left leg and hold it as high in the air as you can, meanwhile bending the right knee and so allowing the body to sink slowly to the floor, still keeping the hands outstretched. When you are in a sitting posture you can rest a moment, then endeavour to rise again without allowing the left leg to touch the ground.

The exercise can be repeated with the other leg raised, and the left knee bent.

### Chest Development.

The following is an excellent chest developer: Lie flat on the floor, face downwards. Now place the hands beneath the shoulders, palms downward, and slowly raise the body, keeping the legs stiff and the back hollowed. When the arms are fully outstretched, the body may be allowed to slowly return to the first position

again. After the exercise is started, no part of the body should touch the floor except the chest. The whole weight must rest on the toes and the hands.

A variation of this exercise is to raise the body as before, and then putting all the weight of the body on the left arm, raise the right, and stretch it out horizontally as far as possible. Now return it to its position, and let the body sink back to the floor. Next time you raise it, place the weight on the right arm, and outstretch the left, and so on, alternately.

For those of my readers who are narrow-chested, I cannot over-emphasise the importance—the extreme importance—of breathing correctly. Don't get in the habit of slouching along the streets with your hands in your pockets, and your eyes on the ground. Throw the shoulders back, brace yourself together, keep the head up, and each time you breathe fill your lungs as full as possible with fresh, pure air. Inhale through the nose, and keep the mouth shut.

Another simple, but valuable, exercise for the chest is to stand perfectly upright with arms outstretched horizontally in front of the body, the palms of the hands together. Now bring the arms slowly round in a circle, until the backs of the hands meet behind. At first it will be an impossible feat for the beginner to perform, but by perseverance he will in time succeed. When the arms are behind the back they must still be kept in as horizontal a position as possible. This exercise will make the muscles of the shoulder ache considerably, and will pull them back in a marked degree. Be careful to keep the arms perfectly rigid.

What is known as "setting-up" exercise is also a fine thing for the chest. The movement is as follows:

Clench the fists and stretch the arms above the head as far as possible. Then drawing a deep breath, revolve the arms round and round as rapidly as you can, ceasing when tired. Besides expanding the chest this exercise gives great pliancy to the elbow and shoulder joints.

(A new series shortly.)

## Profitable Poultry Keeping.

By F. ST. MARS.

The First Article of a Series that will Put Money in Your Pocket.

THE first question one asks when about to go in for poultry keeping is, "Does it pay?" The answer to that is the unparalleled, striding, almost craze-like popularity that this charming hobby has attained during the last few years.

Photography is a great hobby; but no one can take good photographs without study and care. So it is with poultry-keeping; success awaits you, ready to take you by the hand, asking only for the same forethought as you give, or you would give, in exposing and developing a photograph.

"Know your fowls," an old poultry farmer once said to me. A piece of advice summing up the whole secret of success in a nutshell.

On the principle of having a cage before catching your bird, the question of a house for your fowls will require your first attention. Luckily for some of us, fowls are not very particular about their domicile, so long as it is water and draught-proof, airy, and yet warm. They do not mind, for instance, if you put them in a ready-made house, or one you have yourself constructed out of tarred packing-cases or match-boarding, or even if you put them in an old cartshed, or tool-house. I once knew a most successful youth who kept his hens in barrels—hog-heads—tarrad outside and limewashed within, six fowls living in each house.

Good, broad perches should be provided; tree-branches are the best, if you can get them. Round the sides, low down, and not under the perches on any account, a certain number of nest-boxes should be placed. Roughly speaking, these are generally about a foot square. As the idea of a nest is usually uppermost in a hen's mind, these nest-boxes should be kept supplied with clean straw or hay.

It is advisable to have a good coat of tar on the outside of the fowl-house; it preserves the wood and should resist the wet. The roof, if possible, ought to be sloping, and if covered with roofing felt, no wet can get in. Inside, every crevice, every crack will require careful plugging, for draught is fatal to fowls. It will be as well, also, to give the inside a coat of limewash.

The floor, if not of wood, may be simply the ground, the earth well pounded down and made hard. Should, however, the ground be of heavy clay, which is cold and wet, there will be nothing for it but to drain it by digging a trench round the outside. A litter of straw, hay, or "manure" is greatly appreciated by the fowls, though not essential. The manure, by the way, is capital for the garden if diluted.

With regard to the run, of course fowls do best if they are free—if, in fact, they can roam in a grass field. To most of us, however, that luxury is impossible, in which case, the run should be as large as ever you can make it. Two-inch wire netting is generally used for fencing-in runs, the heavier fowls will not fly over a wire fence four feet high, but some of the lighter kinds can climb their wings so well that they must be clipped or pinioned with a strap; a very small run indeed would be better if it has a roof to hold off rain, the run be a small one, it is very liable to become foul; foulness breeds disease, which means loss of money. The earth should, therefore, be changed over occasionally, and fresh soil turned to the top, and the same applies to the floor of the fowl-house.

Poultry resemble most birds in the fact that they like sunshine and hate wind. For this reason they should be kept in the most sunny and sheltered spot possible. If, however, you cannot do this, a low wooden wall may be put up on the side of the prevailing wind. Failing this, even old sacking tied against the wire-netting will be better than no shelter at all.

A little roofed shelter placed in a quiet corner of the run is greatly appreciated by fowls in wet weather. Without this they all crowd into the house when it rains, and having nothing to do are sure to quarrel, and upset those hens which have business with the nest boxes.

Your poultry will also require to be provided with a bath—a dust bath, not a water one. A box sunk in the ground, or slightly raised, is merely a hole filled with ashes, is the kind of bath they like. As this strange kind of abatement is quite useless if the dust is damp, the bath should be under cover, or, at least, in a very sunny spot.

(Another article next week.)

"Will you tell us the reason, sir?"

"I will. There is a certain expression used in the wording of this insulting message which betrays the writer. Again I call upon him to own to the truth."

Mr. Lanyon's eyes were now fixed upon Poindexter, and there was no mistaking their direction. Every other eye followed in the same line, and the boys sitting on the form on either side of the American craned round their heads to look at him.

Poindexter looked amazed at first, and then he went very red.

"Will no one speak?"

There was a grim silence. Poindexter's face grew more crimson as the eyes seemed to burn him from all sides.

"Very well," said Mr. Lanyon, with a dangerous quietness of tone. "I will now ask you directly, Poindexter, whether you sent this valentine to M. Friquet?"

Poindexter started.

"I, sir?"

"Yes, you. Do not trifle with me! Answer me plainly—yes or no."

Poindexter bit his lip.

"I had no intention of trifling with you, sir, and I guess I am not afraid to give a plain answer to anybody."

"Then answer me! But, stay! Look at the valentine first, and then tell me whether you admit it to be your handiwork."

Poindexter mechanically took the sheet held out to him by the Form-master. Why Mr. Lanyon should have picked upon him as the delinquent he could not guess. But he saw as soon as he looked at the valentine.

It was an ill-executed representation of a fat gentleman in an extremely ragged coat and trousers bagging at the knees, with a battered silk hat on his head. Underneath was scrawled in a disguised writing, "I guess it's time Mossoo got a new coat." The ink of the inscription had been blotted immediately after it was written, and the faintness of the writing, added to the disguising scrawl, baffled any attempt to identify the hand.

Poindexter's eyes flashed.

The insult to the little Frenchman was a cruel one. The French master's salary at Cliveden was not so large, of course, as an English master's; and Monsieur, being a kind and conscientious little man, was in the habit of sending all the cash he could spare home to his poor parents in Normandy. This was all the greater sacrifice on his part, as he was really very dainty in taste, and fond of clothes, and he had one suit in which he deemed himself especially killing. But his habitual attire when in the school was decidedly on the side of shabbiness, and some of the more ill-natured of the boys passed jokes on the subject. But such a direct insult as this had never crossed the minds of most of the jokers. Poindexter was the last fellow in the world to jeer at poverty.

He stared at the valentine.

Mr. Lanyon's eyes were upon him, and so were those of the whole form.

"Well, Poindexter?"

The Form-master's voice was hard and sharp, and seemed to cut like a knife.

The American lad raised his eyes, and met those of Mr. Lanyon fearlessly.

"I did not send this, sir."

"Poindexter!"

"I repeat, sir, that I did not send it. I should have thought," went on Poindexter, his voice rising with indignation, "I should have thought, sir, that everybody here might have known me better than to think me guilty of such a dirty action."

The Form-master's brow softened a little.

Poindexter was either innocent, or else the best actor Cliveden had ever seen.

"But if you did not send it, Poindexter—"

"I give you my word that I did not, sir."

"I have always known you to be a truthful lad; but—"

"Why should you think I had sent it, sir?"

"The expression is used by one boy, and one boy only at Cliveden, 'I guess.' No other lad would be likely to write such an expression."

"Unless he wanted to throw suspicion off himself by throwing it on me!" exclaimed Poindexter.

The Form-master started.

"Dear me, I did not think of that!"

Poindexter smiled.

"I thought of it at once, sir."

"But—"

"If I had intended to commit this cowardly action, Mr. Lanyon, I should have taken care not to use an Americanism, and I suppose I should have been able to avoid the use of one for a single sentence—such a short sentence as this."

"I—I suppose so."

Mr. Lanyon was looking quite bewildered.

From the use of the Americanism in the inscription on the valentine he had jumped to the conclusion that it had been sent by Poindexter; but now that it was pointed out to him he could not help seeing that it might just as probably have been sent by any lad who was mean enough to throw suspicion upon the American chum.

The Form-master passed his hand over his brow.

"So—so you did not send it, Poindexter?"

"I did not, sir."

"I—I hope you are speaking the truth. I may say that I think you are. I have always found you strictly honourable. Monsieur Friquet, do you believe that it was Poindexter who sent you the valentine?"

The little Frenchman made an excited gesture.

"I know not vat to zink. Ciel! I have nevair been so insulted! I vill resign my post in zis school, and go away—"

"That you sha'n't, sir!" exclaimed Pankhurst, starting up again. "We'll find out who it was bald-headed."

"Quite so," said Price.

"By Jove!" went on Pankhurst, looking up

and down the table. "I believe there isn't a fellow here who doesn't feel utterly disgusted at such a dirty trick being played on a gentleman we all respect as we do Monsieur Friquet."

"Hear, hear!" cried the Fourth Form.

"Bravo!" cackled Philpot.

"We should all be sorry if you went, sir," said Pankhurst, who was growing quite eloquent. "We all respect and like you, sir. The cad who sent you that valentine was very likely not in this Form at all. If he's in Cliveden, we'll find him out, and show him up."

"Quite so!"

"Hear, hear!"

The tears were running from the susceptible little Frenchman's eyes. M. Friquet was always sensitive, and this proof of the juniors' regard for him touched him to the heart.

"Mes garçons!" he exclaimed. "My boys, I zank you. I zank you very mooch, and I hope I sail always stay viz you. As for ze base person who send me zis valentine, I forgive him, and I hope he nevair feel as mooch pain as he give to his master."

And M. Friquet sat down, and in his emotion stuck his egg-spoon into his pocket, and then stirred his tea with his spectacles. And the Form gave him a cheer, as he deserved.

"And now silence, please," said Mr. Lanyon. "I am truly glad to see this exhibition of the esteem in which M. Friquet is held by my Form."

"Arrah! Hear, hear!"

Also to see my boys dissociate themselves so utterly from the cowardly jest played upon M. Friquet. As for the culprit—

"Sure, and hear, hear!"

"Silence, Flynn! I say, I am now convinced that Poindexter is not the culprit."

"Ciel! I believe it too, parbleu!"

"Tare an' ounds! Hear, hear!"

"Silence, Flynn!"

"Certainly, sir. Hear, hear!"

"As to the culprit, if he is discovered he will be severely punished," said Mr. Lanyon, frowning. "And I hope he will have the decency to own up to his fault and beg M. Friquet's pardon."

"Hear, hear!"

"If you speak again, Flynn, you will take fifty lines."

"Arrah, sir—"

"Fifty lines, Flynn!"

"Thank you, sir! Hear, hear!"

#### The 5th Chapter. Under Suspicion.

PANKHURST slapped Poindexter on the back as the Fourth Form went out of the hall and into the Close to fill up the time to morning school in the fresh open air, and the American it up to the light. Philpot sprang desperately to stop him, but Price jerked round, and thrust him back.

"What are you up to, Panky?"

"Simply expressing my approval," said Pankhurst. "I don't think for a moment you would send that mean rotten valentine to Mossoo—"

"I guess not."

"Sure, we knew it wasn't you, Poin," said Micky. "But we're going to find out who did it, and had the cheek to borrow one of your idiotic expressions."

"One of my what?" roared Poindexter.

"One of your idiotic expressions—I mean the expressions you use in America."

"Ha, ha!" cackled Pankhurst. "He means idiomatic."

"That's it," said Micky cheerfully. "I knew it was something like idiotic. The boulder who borrowed your beautiful idiom for his writin', you see. He knew they'd jump to the conclusion that that 'guessing' was done by you."

Poindexter nodded.

"It was a pesky mean trick!" he exclaimed.

"Rather!" said Pankhurst. "And the rotter who did it ought to be ragged. There are a few fellows here who might have been mean enough. Grahame is one. He is a prefect, and would think himself above suspicion. And we know he hates Poindexter like—like poison or tinned beef."

"Quite so," said Price.

"Or there's Philpot, or Bingham, might have done it," said Neville, or Crane, of the Fifth. "He's a rotter. We're going to find out."

"Sure, and we are!"

"By the way, have you had any valentines this morning, Pankhurst?" asked the American chum blandly.

"Yes; but, by Jove, I'd forgotten it in the excitement!"

"Going to show it round?"

"I'm going to have a look at it first," said Pankhurst. "I believe that young cad Philpot has sent me something, and if it's anything in the same line as M. Friquet's, Philpot will be looking out for a new set of features before long."

"Pankhurst, I wish to speak viz you."

"Certainly, sir," said Pankhurst, and the

Fourth-Formers strolled away, and left him standing with the French master.

M. Friquet looked at the chief of the Old Firm very keenly through his big spectacles.

"Pankhurst, I wish to ask you vun question."

"Yes, sir. Nothing about French grammar I hope, sir. The French class doesn't begin till after second lesson, sir," said Pankhurst demurely.

"It is about zat valentine."

"Very well, sir."

"I gave you imposition yesterday, Pankhurst."

"Yes, sir," said Pankhurst, wondering what on earth that imposition had to do with the valentine Monsieur Friquet had received. "I—I haven't done the lines yet, sir. I was busy yesterday evening, and—"

"I was not going to ask you for ze lines, Pankhurst."

"Glad of that, sir."

"I was zink," said Monsieur Friquet, "zat you mooch annoyed at getting ze lines, and you perhaps send zat valentine to vat you call 'get your own back.'"

"Oh, sir. Nothing of the kind, sir!"

"And as you vas always quarrel viz Poindexter and his shuns, you might put in zat vord zat he use, for ze sake of troubling him, eh?"

The chief of the Old Firm turned scarlet.

"I wouldn't do a mean, rascally thing like that, sir, to save my life," he said, half angrily. "I know we're on rough terms with the Combine—I mean with Poindexter's study—but we play the game. We like each other very well at bottom, too, and our rows are mostly fun. As for playing a mean trick like that, I—I don't think you ought to think it of me, sir."

"I did not say zat I zink it of you. Ze zought came into my mind, and I zink to myself zat I speak to you, and see vever zeres anyzing in it. I believe you, Pankhurst, as I believe Poindexter. It vas not you!"



On the blotting-pad was the imprint of a blotted sentence—backwards of course. But the ink had been blotted so freshly that the print was quite clear, and one word, at least, could be read with ease—the word "guess." Pankhurst excitedly seized the pad, tore off the sheet, and held it up to the light. Philpot sprang desperately to stop him, but Price

stared at him.

"What are you up to, Panky?"

"Simply expressing my approval," said Pankhurst. "I don't think for a moment you would send that mean rotten valentine to Mossoo—"

"I guess not."

"Sure, we knew it wasn't you, Poin," said Micky. "But we're going to find out who did it, and had the cheek to borrow one of your idiotic expressions."

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"Pankhurst, I wish to speak viz you."

"Certainly, sir," said Pankhurst, and the

Pankhurst sweetly. "May I trouble you to repeat your remarks, Philpot?"

"Quite so," said Price.

"I—I—I—"

Pankhurst shook his head.

"That is not correct. Was he simply repeating the first person singular pronoun when we came up, Pricey?"

"Certainly not," said Price.

"You see, you're wrong, Philpot; and I have the corroboration of my friend Price on that point. Now, may I trouble you to repeat your remarks?"

"I—I—I—"

"Wrong again: I tell you, Philpot, that you were not simply repeating the personal pronoun first person singular when I had the honour of hearing you. Will you kindly repeat your real remarks, or do you prefer to have your nose rubbed in the mud? It is quite immaterial to me."

"You—you beast! Let go my neck!"

"Wrong for the third time. He wasn't saying anything about his neck when we came up, was he, Price?"

"Quite so—I mean, no, certainly not."

"You see, Philpot, prevarication is useless," said Pankhurst, his face remaining as grave as a judge's, though the juniors round him were giggling and shrieking. "You were not repeating pronouns, nor were you talking about your neck. Now, this is your last chance of repeating your real remarks."

"I said Poindexter sent that valentine to Mossoo!" shrieked Philpot, as Pankhurst began to force his head downward.

"Yes, and you said something else."

"Did I? Oh, ow, ow! Yes, I remember. I said you and Price had done it to get Poindexter into a row, if the Yank hadn't done it himself."

"Ah, now we're getting at it. Now, Philpot, that was a beastly mean thing to say, wasn't it?"

"No—yes, yes!"

"Are you ashamed of yourself for having said it?"

"No," yelled Philpot.

"Dear me! He is impervious to shame, apparently. We must see whether he is impervious to mud. Nov.!" Philpot's head went down towards the muddy ground in the iron grip of Pankhurst, and he wriggled desperately.

"Stop, you beast!" he roared.

"Are you ashamed of yourself, then?"

"Yes, yes."

"H'm. That is a very sudden change of sentiment. Are you sure you are not shamming?" asked Pankhurst, anxiously. "Are you quite sure that you are ashamed of yourself, Philly?"

"Yes—oh, yes!"

"Very much ashamed of yourself?"

"Yes—oh, yes!"

"Very well, if you've really come to a properly repentant frame of mind, perhaps I can let you off rubbing your proboscis in the mud," said Pankhurst thoughtfully. "You admit that you didn't really think what you said, but only said it out of mere rottenness?"

"No—I mean yes—oh, yes!"

"Then you can go, you rotter."

And Pankhurst gave Philpot a twist that sent him staggering. The cad of the Fourth picked himself up, red with rage, his eyes ablaze with spite.

"You—you hound—I'll—"

Pankhurst made a motion towards him, and the cad of the Fourth took to his heels. The Old Firm laughed and walked on, leaving the juniors grinning at the ridiculous figure Philpot had cut. They knew him for a cad and a back-biter, and no one had any sympathy to waste upon him.

Pankhurst and Price halted under the elms by themselves, and Panky drew out the letter he had received that morning and opened it. The valentine which had been concocted in No. 4 study by the united brain power of the Combine stared the Old Firm in the face.

Pankhurst and Price gazed at the two depicted youths with the flaming red hair, and mechanically read out the limerick written underneath. Then they gazed at each other.

"My hat!" said Pankhurst. "My only pyjama hat!"

"Quite so!" said Price.

"So this was what Philpot was concocting yesterday in the common-room when we surprised him by coming in. This was what he stuck under his jacket, so that we shouldn't see it. This."

"Quite so."

Pankhurst and Price had no doubt upon the subject. The mistake was pardonable. Philpot's action had been suspicious, and the chum of No. 10 had drawn a really very natural inference from it.

"I think," said Pankhurst, in measured tones, "that we'll see Philpot about this, and see what he's got to say. I'm not going to have rude remarks passed about my hair by that rotter, if I know it. I know it's rather inclined to be a rich Auburn."

"Quite so," said Price.

"My word, Price, I wish you'd find something else than 'Quite so,' to say sometimes," said Pankhurst. "You're always bringing that out at the wrong time. It worries me. I really can't think—"

"Quite so," said the imperturbable Price.

"Oh, come on," said Pankhurst. "Let's go and look for that measly worm, and tread on him!"

But the ringing of the bell for first lesson interrupted their quest of Philpot, and they had to march into the class-room with the Fourth Form.

(Continued on the next page.)

## The 6th Chapter.

## The Secret Out.

PANKHURST and Price did not forget that valentine. They remembered it when the Fourth Form was dismissed after morning school, and they had not forgotten the supposed author. Philpot left the classroom first, and the Old Firm did not see him when they came out. They proceeded at once to his study.

Pankhurst opened the door by the unceremonious process of jamming his boot on it, and the Old Firm strode into the room.

Philpot started up from the fire-grate. He was roasting chestnuts, and he apparently thought that the auburn-haired chums intended to deprive him of them, for he quickly placed himself between them and the intruders, with an alarmed look.

Pankhurst burst into a laugh.

"We're not after your chestnuts, Philly," he said. "What we want to know is, did you send us this valentine?" And he held out the product of the Combine's united intellects.

Philpot, looking considerably relieved, stared at the valentine and grinned.

"No, I didn't," he said. "I couldn't draw like that."

"My word!" said Pankhurst, "there's something in that. I know you can't draw for toffee. I never thought of that."

"Better inquire at No. 4 study," sneered Philpot.

"I shouldn't wonder. But wait a bit. What were you hiding under your jacket when we caught you in the common-room yesterday?"

Philpot coloured.

"Nothing."

"Was it a valentine?"

"Well, suppose it was," said Philpot sullenly. "I never sent one to you, and that's enough."

"You sent one to somebody, anyway—"

"What on earth's the matter with you, Price?"

Price had given a sudden shout.

"Great Scott!"

"What's the matter?"

"The matter! Why, I've found the rascal!"

"What rascal?"

"The rascal who sent the valentine to M. Friguet."

"Who is it, then?"

"Philpot."

"It's a lie!" screamed Philpot, turning white.

"How do you know, Pricey?"

"Why, it was that he was hiding when we came into the common-room yesterday, and—"

"More likely one to us."

"I tell you it was that one, and I can prove it."

"Prove it? How?"

"Look here!"

Price pointed to a blotting-pad on the table.

He had been looking idly about him while Pankhurst was speaking to Philpot, and something had caught his eye. Pankhurst uttered a sharp exclamation as he saw what Price was pointing out.

On the blotting-pad was the imprint of a blotted sentence—backwards, of course. But the ink had been blotted so freshly that the print was quite clear, and one word, at least, could be read backwards with ease—the word "guess."

Pankhurst excitedly seized the pad, tore off the sheet, and held it up to the light. Philpot sprang desperately to stop him, but Price thrust him back.

With the sunlight shining on the paper, the blotted sentence showed through it, and it could be easily read.

"I guess it's time Mossos got a new coat."

There it was in black and white!

The sentence which had been written on the insulting valentine; there it was, just as Philpot had blotted it after writing it. There it was—interrupted in the common-room, he had evidently gone to his study to finish. In danger there of being seen and interrupted, he had hastily written the sentence and blotted it—never thinking of the impression left on the blotting-pad. But for Price's glance falling upon it by sheer chance, the proof would never have been forthcoming. But there is a chance which plays a part in the detection of evildoers which is like fate.

"You rotter!" said Pankhurst, turning a glance of withering scorn upon the shrinking cad of the Fourth. "I thought it was probably you, but I never expected to bowl you out with a clear proof against you!"

"You'll go straight to Mossos, and confess and beg his pardon," continued Pankhurst sternly. "Then you'll stand up in the Form-room and own up to the thing before all the Fourth."

"I won't!"

"Then I'll take this blotting-pad straight to the Head, and see what he thinks about it."

"Give me my blotting-pad!" shrieked Philpot.

"Will you do as I tell you?"

"Ye-es."

"Lose no time, then. I can hardly keep my hands off you as it is."

And Philpot, shrinking from Pankhurst's blazing glance, crawled from the study. Half an hour later all the Fourth Form at Cliveden knew the truth, by the culprit's own confession.

The Combine and the Old Firm discussed the matter solemnly, and agreed that Philpot was to be sent to Coventry for a week as a punishment for his mean action, and his greater meanness in attempting to implicate innocent parties in it.

The sentence of "Coventry" was carried out by the whole Form, and Philpot, in the extreme seclusion of the bleak regions of "Coventry," had ample time to reflect that the way of the transgressor was hard—sometimes very hard indeed.

THE END.

**"SNOWED UP."**  
NEXT WEEK.

## Easy Photographic Experiments.

By the Rev. F. C. LAMBERT, M.A., F.R.P.S.,

EDITOR OF "THE PRACTICAL AND PICTORIAL PHOTOGRAPHER."

## A Zinc Disc Experiment.

PERHAPS you may be thinking that I have forgotten all about the small piece of zinc about the size of a penny that I mentioned to you. It has only been waiting its turn to appear in our little experiments.

**Experiment 14.**—If the zinc disc is of thin metal, perhaps you will be able to trim it up into something like the shape of a circle by using an old strong pair of nail scissors, or a file. Then with a dust of emery powder from the knife-cleaning board, clean it on both sides. Now take a two-shilling piece or a half crown and clean this with a little soap and a nail brush. Then lay the zinc on the tip of the tongue and the half crown under the tongue, and bring the edges of the two metals, zinc and silver, to touch each other. S is the silver coin, Z the zinc disc, and T the tongue end. At the moment they touch you will perceive a peculiar kind of half taste, half sensation. It suggests acid, it suggests something cold, and it tastes rather like small needle points—in fact, I do not know how to describe it, but the best way is to try it. In fact, it is a very slight electric current that is set up by the metals, which passes through your tongue.

## Electrical Experiments Coming.

I may here say that I hope, with our good editor's kind permission, to tell you something more about some other very simple electrical experiments presently, so must not stop to say much about this one just now. The point to notice is that when silver and zinc are brought together, an electric current is set up. Well, now, in our late experiment with the zinc hook and silver chloride and acid water, the acid caused the zinc to give off tiny bubbles of hydrogen gas, and this caused the silver chloride, which was in contact with the zinc hook, to be changed to grey silver. Then an electric current was set up, which caused other particles of silver chloride to be changed to grey silver, and so on until all the white chloride was converted into grey silver.

But now that you know how to make silver chloride, I advise you to buy it ready-made rather than make it for yourself, and this for two reasons. It is really cheaper to buy it in small quantities than it is to make it, and also what you buy is purer than that an ordinary amateur can make.

I daresay it sounds rather funny to say that the price of silver varies—but it is a fact, and consequently the price of silver nitrate varies also, and the price of the metal and the nitrate generally are just about the same per ounce. The present price of each is about 2s. 3d. per ounce (less than half of what it was when I began photography). I advise you buying from a photographic chemist one dram, that is, sixty grains (one-eighth of an ounce, apoth.), to put this in a new one-ounce glass-stoppered bottle, and get him to fill it up with distilled water for you. This is what is called a "sixty grain per ounce" solution, and is useful for sensitizing paper for printing and other purposes. Keep this bottle in a safe place in the corner of a cupboard, out of daylight, and do not forget to have it properly labelled, "Silver nitrate: sixty grains per ounce." We shall want this for our next lesson. Before closing this chapter, I want to tell you of a rather neat trick with which you can catch your friends, one by one, for I have hardly ever known it to fail. Select a penny, not very much worn, and preferably one with the late Queen Victoria's head on it. Clean this carefully and thoroughly, first with a nail brush and kitchen soap, and then with a little whiting and a few drops of household ammonia, and do not finger it again except by the edges. Then put it into your fixing bath that has been already used for fixing plates and papers.

In this case, the more the fixing bath has been used the better for our purpose, and if it is old and discoloured, it will act just the same. Let the penny remain in the old fixing bath for a few minutes. Then take it out and you will see it has been silvered. Then give it a gentle rub with a little whiting, and return it to the hypo bath for more silver. Then again gently polish

so, then pin up to the edge of a shelf in a warm place. This can be done in the daylight. The paper is called "salted" paper. Prepare half a dozen pieces at one time, as it keeps in good order for months if kept fairly dry. It is best kept between clean dry blotting-paper in a large book to keep it flat.

Next pour out one drachm of your nitrate of silver solution—sixty grains nitrate of silver per ounce of distilled water—into your small glass measure, having previously made sure that the measure is quite clean. Now by artificial light—gas or lamp—brush the silver solution evenly as you can over one side of a piece of salted and dried paper. To do this it is a good plan to fix the salted paper down to a sheet of stout card by means of a pin at each corner of the paper. Then with the glass rod and a bit of clean cotton-wool sweep the solution across the top. Repeat the next stroke along the edge of the first, and the third stroke along the edge of the second, and so on. Go slowly, and only stroke the paper one way and once only. At the end of each stroke moisten your brush by a slight dip in the silver solution. Tilt the card up like the tilt of a writing-desk, so that the solution tends to flow to the bottom of each stroke. Do not return any unused silver solution to the stock bottle, as that would spoil the lot.

This sheet must be dried away from daylight, but may be dried by feeble artificial light. The card and sheet of paper may be set on edge in a dark cupboard, or in a room where there is a fire. You may as well prepare two or three sheets at a time. Each sheet before being silvered should be marked at the back by a pencil cross in each corner. When the sheets are quite dry it is best to put them face to face—i.e., silver sides together, and keep dry and flat in a large book. They will only keep a few days in good order.

To print this paper we require a fairly bright and plucky negative. Before putting the paper and negative together, it is a good plan to hold each of them in front of the fire for a minute or two, so as to make sure they are quite dry. Print in daylight in the usual way, but carry the printing a full shade darker than the finished picture is required, until the details are seen in the highest lights. By this time the shadows will be "bronzed"—that is, have a kind of green-bronze black metallic look. This need not trouble you as it will presently disappear.

(This most interesting article will be continued in next Wednesday's issue. Order your copy now.)

## HOW TO RENEW A BROKEN SASHLINE.

Another Splendid Article by G. F. R.

THERE are probably few people who are not aware of the great inconvenience involved through a broken sashline. Its renewal can easily be undertaken by anyone provided they know the method in which it is accomplished.

The tools required consist of a hammer, screw driver, pair of pincers, a Bradawl, a few nails, and, of course, the new line.

Fig. 1 gives a section showing the manner in which sliding sashes are usually constructed. The pulley stile (A) contains the line and pulley, and also a pocket piece, which will generally be found about one foot above the sill. The parting bead (B) is to guide the sashes while the slip (C) inside the pulley stile, fills the same office for the line and weights.

We will assume that the left-hand bottom sash cord requires renewal; the same process with slight differences, will answer for the other.

First remove the side beading (D) by inserting a chisel or screwdriver between it and the pulley stile. Now lift out the sash bodily, allowing it to hang on the unbroken line, and place it where convenient to hand. Next remove the parting bead (B). No nails should be found in this, as it fits into a groove and is not secured other than by paint.

The pocket piece must now be looked for and removed. Its position and construction is shown in Figs. 2 and 3. It is merely a loose piece fitted into the pulley stile to enable one to gain access to the weights, etc., and is held in position by the parting bead fitting into the groove as shown in sketch. It will easily be recognised by its joint marks.

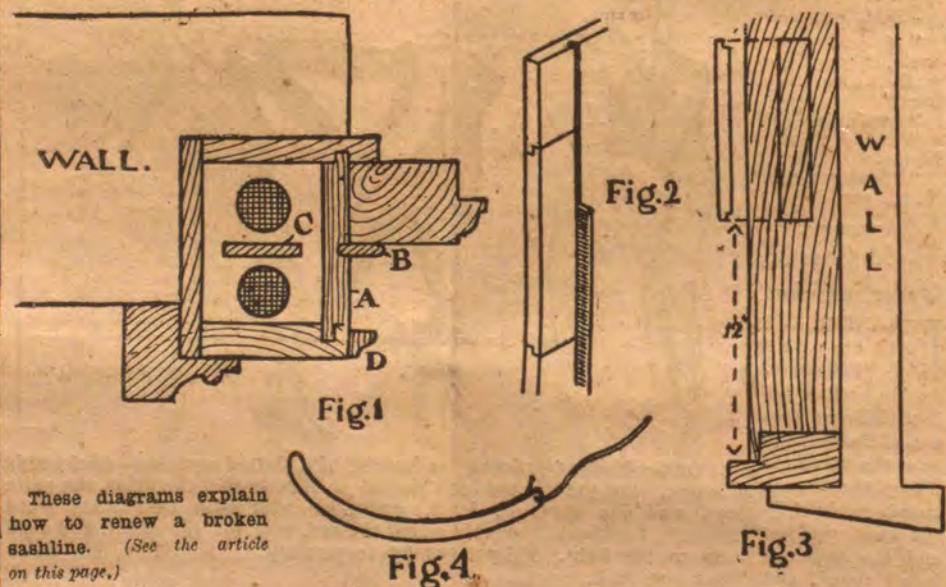
To remove it, insert the point of a screw driver or Bradawl near the bottom, pressing it outwards and gently tapping the stile below. It ought to fall out readily. Having removed the broken line and weight will be disclosed.

The next step is to pull the new cord over the axle pulley. For this purpose is usually termed into requisition what is termed a "mouse" (Fig. 4), which is made by doubling up a piece of sheet lead, or anything that will answer the same purpose, into a strip about three inches long, and drilling a hole at one end for attaching a piece of string. It should be bent somewhat into the shape shown, to enable it to pass easily over the pulley wheel.

The end of the new sashline is tied to the other end of the string, which is afterwards removed, and passed through the hole in the weight, and knotted.

In the case of a broken cord of the top sash, proceed as described, but as the bottom sash comes first, this must be put out of the way while working. The best plan is to run it to the top of the frame and lift it forwards into the room, the cords acting as hinges, then tying or propping it into that position whilst working.

THE END.



These diagrams explain how to renew a broken sashline. (See the article on this page.)

So you see the tongue experiment helps us to understand the change of the silver chloride.

Let us stop a moment and bring to mind Experiments 10 and 11, which showed us that daylight changed the outside of the particles of white silver chloride to dark silver. Now we see that electricity does the same thing. Can light and electricity be the same thing? Perhaps some great scientists think they may be, if not the same thing, at any rate very much more closely related than we generally suppose is the case. This is a deep question which we must pass over now.

## Don't Make Silver Nitrate—Buy It!

**Experiment 15.**—Having collected and washed as much grey silver as we can in Experiment 13, we now pour off as much water as possible, and then add a few drops of nitric acid. This dissolves the silver again. For this experiment we must only use just enough acid to dissolve the silver. Then slowly warm this solution over the spirit lamp until it bubbles and gets pasty looking. Then put aside to cool. Next add a few drops of water which, for this purpose, ought to be distilled water, if you have any. Then warm again till it just begins to boil. Now set aside to cool. Then pour out the contents into a small, quite clean saucer, and put in front of the fire. Presently it will dry up, leaving a little white patch. Examine this with a magnifying glass, and you will see that it is composed of small flat irregular crystals of silver nitrate. Note the fact that nitrate of silver (or silver nitrate) is a crystalline substance, and chloride of silver (or silver chloride) is a non-crystalline (or amorphous) substance.

If we put a little of each substance on a piece of clean, dry glass, and expose to daylight, we shall find that the chloride changes colour, but that the nitrate shows very little if any colour change.

I have told you how to make silver nitrate because I wanted to make you quite familiar with one or two things about silver in various states, which are very useful to know, and these facts could not be learned so easily in any other

way. But now that you know how to make silver chloride, I advise you to buy it ready-made rather than make it for yourself, and this for two reasons. It is really cheaper to buy it in small quantities than it is to make it, and also what you buy is purer than that an ordinary amateur can make.

## An Easy Way of Making Photographic Pictures.

Our next experiment is one of special interest, because it shows us one of the very earliest ways of making photographic pictures; and, in spite of many other methods and processes since introduced, this old and simple way yet holds



See "Easy Photographic Experiments," on this page.

its own, and, moreover, is capable of giving very beautiful prints with a very moderate degree of care.

**Experiment 16.**—In eight ounces of water dissolve eighty grains of table salt. It may be useful to mention that a new shilling weighs practically eighty grains, a sixpence forty grains, and a threepenny piece twenty grains. Put this salt solution in a large pie-dish or soup-plate, and put in a half-sheet of good quality writing paper; or, better still, a similar sized piece of fairly smooth drawing paper. Let the paper soak in the salt solution about three minutes, so as to get thoroughly penetrated with the salt water. Then draw it out slowly, let it drip a minute or