

# THE AMERICAN RIFLEMAN'S MAGAZINE

## ARMS AND THE MAN



VOL. LXIX, No. 4

NOVEMBER 1, 1921

### When You Buy N. R. A. Cartridges Look for the Make as Well as the Name

During the war, we developed a Long Rifle Lesmok cartridge of unprecedented accuracy at ranges of from 50 to 250 yards.

This cartridge seemed particularly well adapted to the needs of expert riflemen. These are the men who form the backbone of the National Rifle Association. So we named this cartridge the US .22 N. R. A. It seemed an especially suitable name.

Apparently other people agreed with us in that; for after spending some three years of time and many thousands of dollars popularizing the name and telling the riflemen about the cartridge we notice that others have appropriated the same designation—"N. R. A."—for a cartridge of the long rifle style.

The US .22 N. R. A. is the original .22 Long Rifle cartridge developed for long range work. Not only

is it exceptional in its uniformity, accuracy and penetration; but it is made with priming that is practically non-rusting and non-pitting and that will greatly prolong the life of your barrel.

We are convinced that the US N. R. A. cartridge has not been equalled. We do not think it is likely to be equalled. If it can be improved upon, you may be sure we will do the improving.

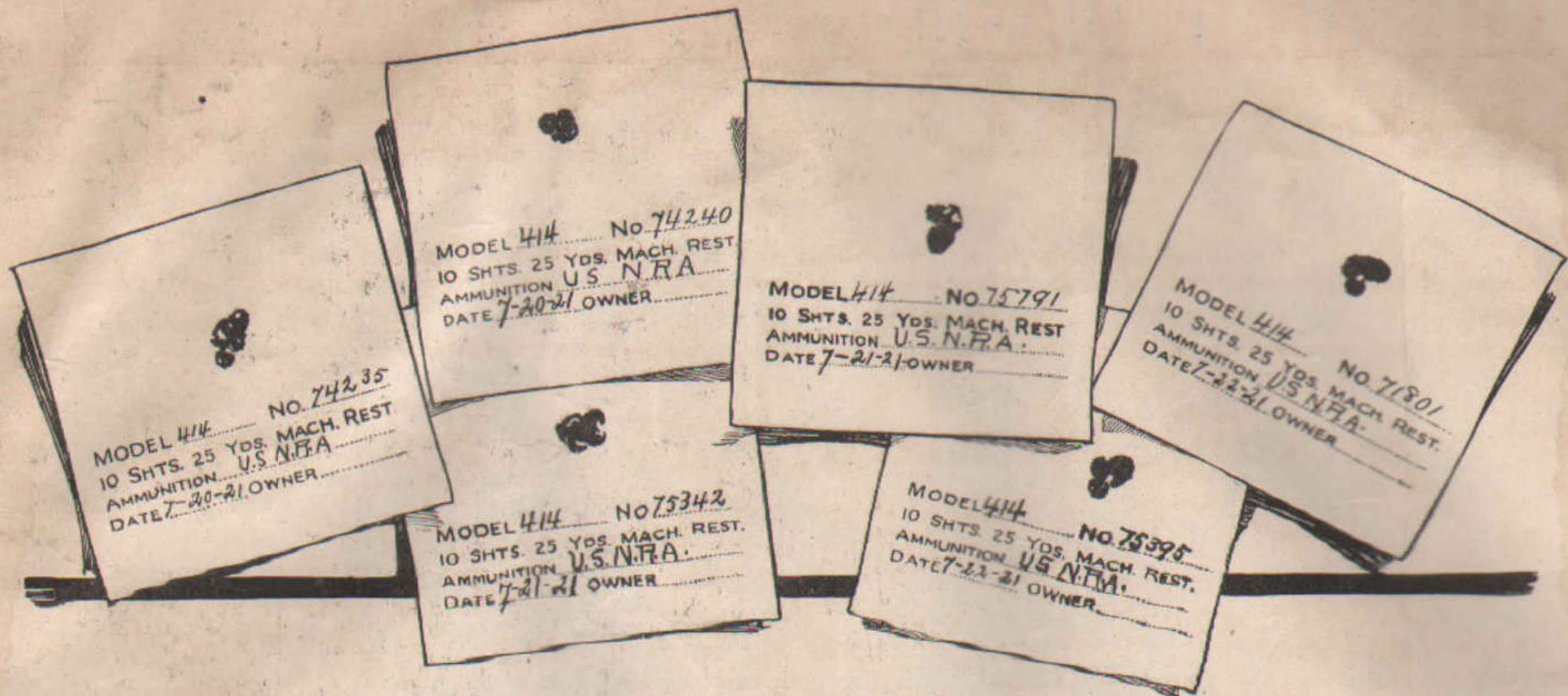
Under the circumstances, we feel that we owe it to our friends—to those thousands who have come to associate the name "N. R. A." with a certain highly developed cartridge of our make—to warn them of the possibility of confusion and the need for making sure that the US name and trademark appear on the box when they ask for N. R. A. cartridges.

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At the Olympic Games in 1920 Stevens No. 414 Rifles were used by the American Team in the Small Bore Events. And they won!

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This summer the Sea Girt Small Bore Championship was won by J. L. Renew with a Stevens No. 414 Rifle.

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## Concerning the Strength of the Springfield

By MAJOR J. S. HATCHER.

### PART I

THE modern military rifle is built with a sufficiently large factor of safety to make a failure from almost any cause seem a very remote possibility. However, almost every rifleman who has been in the game any length of time has seen one or two burst rifles—enough at least to make him stop and wonder whether or not his own pet high-velocity load is likely to be a trouble-maker. I know from the letters I get that there are a lot of people who are doing that kind of wondering, and I know that it is not a good thing, for a nervously inclined individual who is afraid of his gun usually does his wondering just about the time he pulls the trigger, which is a state of affairs not conducive to the best marksmanship. So in order to put an end to as much of this speculation as possible I am setting down in this article some of the facts that have been learned in the last few years on this subject.

The first point to be considered is the strength of the barrel. Of the burst rifles which are returned to Springfield, about three-fourths show barrel failures. This naturally leads to a question as to whether or not the barrel is properly designed as to strength. The best answer is a practical test, and the proof-test to which every Springfield barrel is subjected is a very practical one. It consists in firing one high-pressure cartridge, or "blue pill," and then five regular cartridges, in every barrel manufactured, before it is accepted for service. The regular cartridges give a pressure of 50,000 lbs. per square inch, while the "blue pill" gives from 70,000 to 75,000 lbs. The "blue pill" gets its appropriate name from the fact that in order to distinguish it from the service load it has a tin-plated case which gives it a bluish-white color.

It would seem that such a test would destroy all weak barrels, and that consequently there would be no burst barrels heard of. But we know that barrels do burst. What is the explanation?

To help us to solve this problem every gun that bursts in service is returned to Springfield for examination. And this examination rarely ever fails to show clearly the cause of the failure. In a very large majority of cases the barrel shows a decided annular bulge or ring at or near the origin of the fracture. This is positive evidence that there was an obstruction in

remove an obstruction by shooting it out. The great mistake that they make is in leaving the bullet in the cartridge with which they try to shoot out the obstruction. When the gun is fired the bullet rushes down the barrel with tremendous speed until it strikes the obstruction. In trying to pass through the obstruction the bullet wedges it outward with such force as to ring the barrel; and if the obstruction is large enough, the bullet is suddenly checked in speed sufficiently to cause the gas moving at high velocity behind it to pile up on its base and exert its dynamic energy laterally, with destructive effect on the barrel. However, if the bullet is removed from the cartridge before trying to shoot out an obstruction, the attempt is usually successful. In this case, the pressure rises relatively slowly as the powder burns, until the force is sufficient to drive out the obstruction. As the effect is not localized on any one part of the barrel, no damage is done. In such cases the pressures produced are very much less than those ordinarily given by a service cartridge. The reason is, that in shooting out an obstruction the gas has several inches of the bore in which to expand, while in the ordinary service cartridge with the bullet in place, the powder gas has only the cartridge case to expand in until after it has moved the bullet. With a small powder space, the pressure rises fast, and high pressure causes the powder to burn faster, with still higher pressure.

the barrel when the gun was fired. A large and heavy obstruction, such as a bullet, will often make a lump as big as a walnut, while a small obstruction, such as a cleaning patch, will sometimes

leave a barely perceptible ring. When a gun is fired with an obstruction in the barrel it does not always burst, though it generally does. Sometimes the obstruction merely causes the annular swelling. Twice I have seen machine guns accidentally fired with a

second bullet already in the barrel, and in neither of these cases did the barrel burst. In the case of a Lewis gun the accident was not

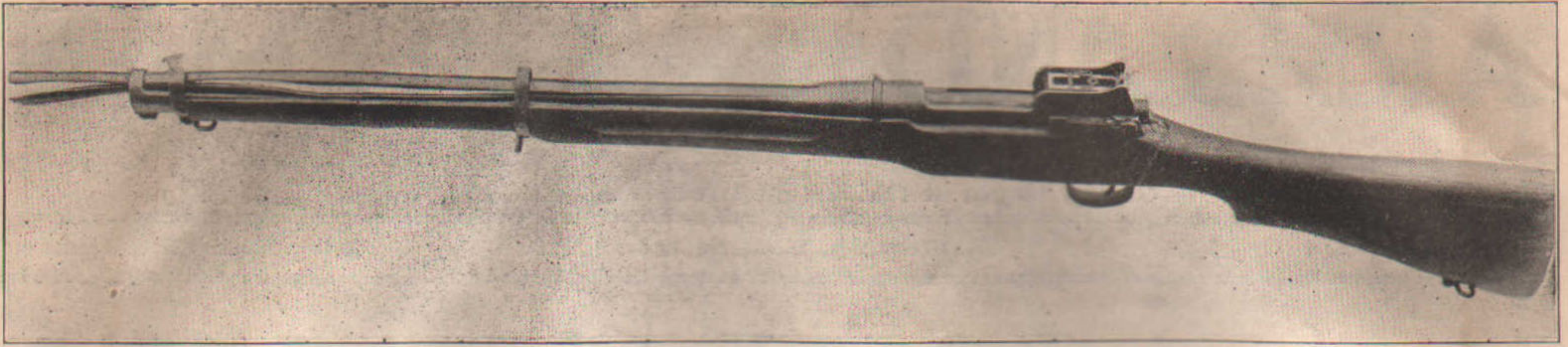
discovered until several hundred additional shots had been fired, though there was a large lump formed. I have seen a Springfield rifle which shot very well, but which had a lump on the barrel near the muzzle. On cutting the barrel open it was found that there was a bullet jacket embedded in an annular groove. This jacket, which was the cause of all the trouble, had evidently stuck in the barrel and the next bullet had passed clear through it without driving it from the bore, but at the same time had wedged it outward with such force as

to embed it in the steel and thus form the ring. The accident was not discovered until some time after it happened, and in the meantime quite a few shots had been fired.

Barrels are often burst by the effort of inexperienced persons to

Pressures up to 133,000 pounds per square inch failed to rupture barrel, bolt or receiver of this Springfield. The stock was shattered by escaping gas.





A typical obstruction break: A plug to repel dampness was placed in the muzzle and was not removed before the rifle was fired.

In the days of the muzzle loader a series of experiments was carried on at Springfield to see whether or not guns could be damaged by having the bullet rammed only half way down the barrel. These experiments showed not only that the gun could not be injured in this way, but also that the farther the bullet was from being down on the powder, the less the pressure. Accordingly it would seem safe to remove obstructions by shooting them out with powder and no bullet. I have removed many in this way, though I usually pour out half the powder since the remainder is amply sufficient in most cases.

Besides obstructions there are two other occasional causes of barrel failure. One of these is seamy metal. Before any machine work is done on the barrels they come to the factory in the shape of billets of steel, which are afterward heated and rolled to the approximate shape of the barrel. In this barrel steel, as in any other metal, flaws will occur. When the pieces of barrel steel are rolled out to a long shape to make the barrel blank, any flaws that they may contain

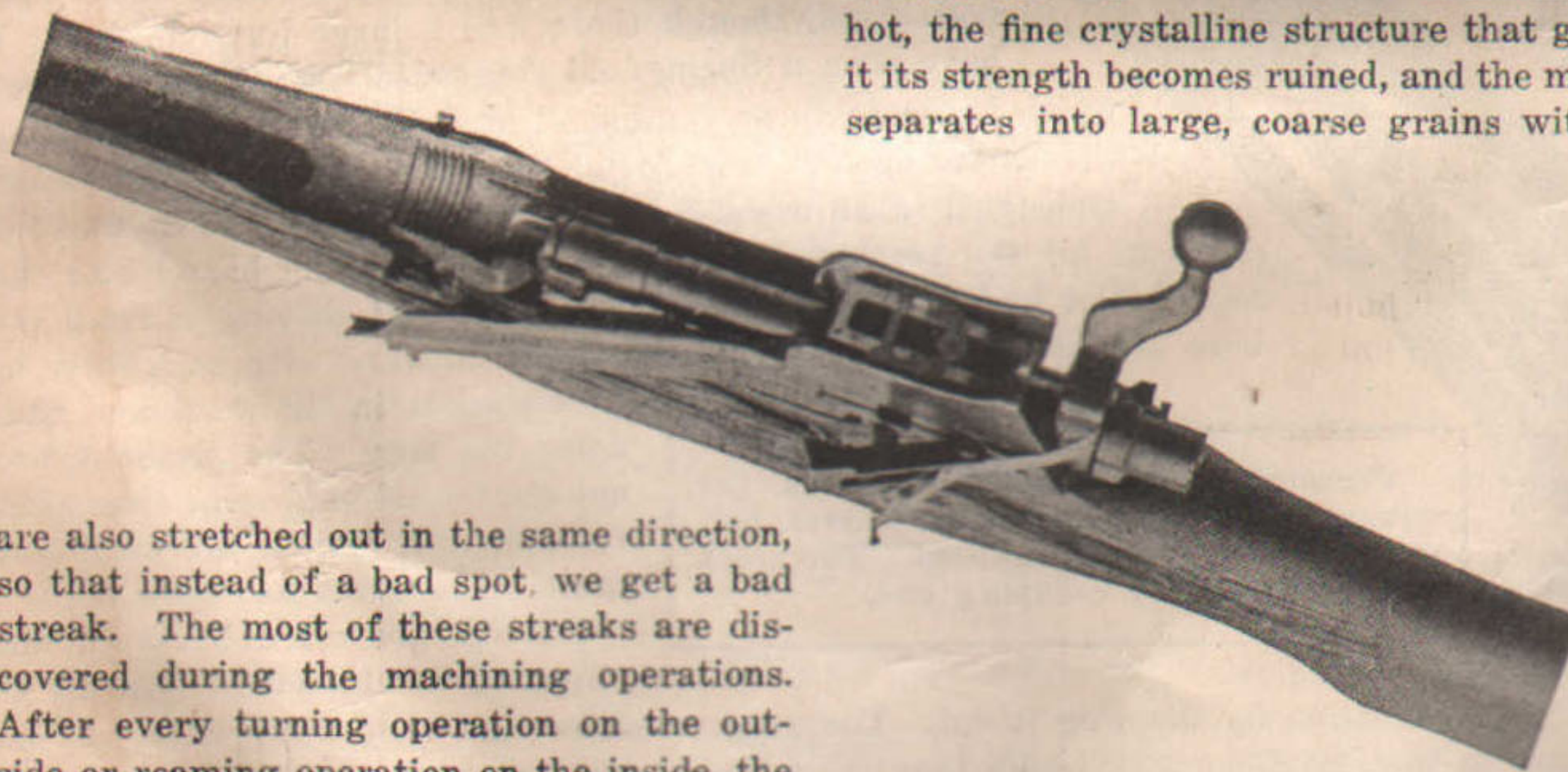
are also stretched out in the same direction, so that instead of a bad spot, we get a bad streak. The most of these streaks are discovered during the machining operations. After every turning operation on the outside or reaming operation on the inside, the barrels are carefully inspected, and any with flaws are of course thrown out. Once in a great while, however, it happens by chance that a seam or flaw may be entirely inside the walls of the finished barrel. There is no way of detecting such a flaw. Luckily, the high pressure test eliminates most of these barrels. Some which the flaw does not greatly weaken may stand the high pressure test and get into the service. Then if by using grease, or by improper hand loading, excess pressure arises, the barrel may fail.

Another trouble that has been experienced recently is burnt steel. Before the war, the billets of steel were rolled into barrel blanks at Springfield Armory. But during the production rush of 1917 and 1918 outside sources were called on to do this work, and the barrel blanks were bought from the steel-makers already forged to shape. These factories, instead of rolling the barrel blanks to the finished shape, as Springfield did, took bars of steel which were already of the right diameter for the main part of the barrel blank and formed the enlarged breech end by heating this part of the blank very hot and then upsetting or bumping up the large part. In order to get quantity production, a great many of these blanks were heated at once, and in order to make them forge up easily and quickly, they were made good and hot. For this, as well as all other work, the steel companies had to contend with the shortage of skilled help that was felt everywhere during the war. Under such conditions it was natural that once in a while a piece was left too long in the furnace and became too hot. When steel becomes too hot, the fine crystalline structure that gives it its strength becomes ruined, and the metal separates into large, coarse grains with a

firing, gradually get worse in service until a break occurs. Of course, this condition only occurs in an extremely small percentage of the blanks; perhaps one in two or three thousand, and most of these are detected by inspection or fail on proof. That the danger from this cause is small is evident from the fact that though all guns manufactured at Springfield Armory since the war have barrels made of this steel, it is only recently that the accident occurred which led to the discovery of this condition. As there were several hundred thousand barrel blanks on hand at the end of the war, it is certain that all barrels to be made for a long time to come will be made from this steel. There is, however, very little reason to fear any danger from this cause in the future, for now that the trouble is understood, every possible step is being taken to prevent any defective barrels from being sent out. For the sake of greater safety, Springfield has even gone to the extremity of raising the proof charge to 75,000 lbs.

Besides the causes of trouble that we have mentioned, some people will expect to see excess pressures listed as a reason for failures. If so, they are to be disappointed, as far as this article is concerned, for I do not believe that any small-arms cartridge ever had a sufficient pressure to burst a perfect Springfield barrel. In the course of some experiments on receivers several years ago, I used pressures of to 130,000 lbs. without any apparent ill effects on the barrels. I have heard something about experiments conducted by Ross on the thickness of barrels, and have read some remarks by Newton on the same subject, but I couldn't get sufficiently authentic facts to satisfy me, so I collected some first-hand information by turning a Springfield barrel to one-eighth inch wall thickness and firing it with regular and high pressure cartridges. As the results were not visible, I turned the barrel down so that it was only one-sixteenth inch thick over the chamber. It held three regular service cartridges perfectly. I then put a 75,000-lb. shot through which blew a piece out on the side. As the thickness of the regular barrel at this point is five-sixteenths of an inch it is plainly evident that the strength should be sufficient.

(To be concluded.)



Another obstruction break: A cleaning patch was left in barrel near lower band

gaseous film between them which takes away their power of cohesion and makes the steel weak and brittle. This condition is very hard to detect, because burnt steel looks like any other steel, and in automatic machinery any difference in the machining qualities could not be noticed. If such a blank should be made up into a barrel and pass the proof test it might, from the repeated shock of



# Coaching the Dewar Team

BY AL BLANCO

*The first of a series of discussions to appear previous to and during the gallery match series of 1921-22, from recognized authorities on indoor shooting. The author of the first of the series was formerly well known as a small-bore shot, a member of some of the old international teams and well acquainted with his subject—the importance of team work, coaching and the center of impact in relation to successful team shooting.—The Editors.*

**T**HIS subject is so extremely interesting and so important and far-reaching in its application to consistently accurate team shooting that it is considered well worth while to give the readers of ARMS AND THE MAN the benefit of some observations.

Coaching is probably even more important than a good rifle or ammunition. The smallest group possible is no good an inch or a foot from the center of the black. It would be far better to have mediocre ammunition that would sprinkle the shots more like a shotgun pattern and take in a greater area rather than a quarter group in the six ring of the target.

We have all seen some very fine groups, which, if properly centered, would count for the possible, whereas the shooter only got a bare 95 out of the possible 100. Even with all the coaching in the recent Dewar Match, one of the good shots on the team had a lovely group at nine o'clock and counted about 93 instead of 99, but in justice to the team captain and team coach, it should be said that the man who coached, this particular member, while a good shot himself, did not thoroughly understand the importance of "center of impact"—and there is the whole story.

I am going to use the 1921 Dewar as an object lesson to illustrate the points I shall bring up in this story to emphasize the importance of coaching and team work in their relation to accuracy and success in team shooting. More through enthusiasm than anything else, I was intimately associated with Captains Crossman and Wotkyns in the try-outs for the team, and the final selection of the shooters who were designated to form the Dewar Team of twenty men for the 1921 match. In an unofficial capacity it was my privilege to follow the shooting and observe the relative ability of the team members. Scoring the targets of the competitors in these small bore matches gives one an intimate knowledge of a shooter's holding ability.

The group being the ultimate object properly placed on the target, there is no luck in making the score; the shooter must hold, and then hold some more. A horseshoe and the well-known rabbit's foot have no place in his short and hectic career in the Dewar.

So we all watched the practice and try-out targets fired by the team members at 100 yards and it was no difficult task to decide who were the holders. We made mental notes of the "shotgun pattern"

makers with the object of placing a good coach alongside of the doubtful ones in the Match itself.

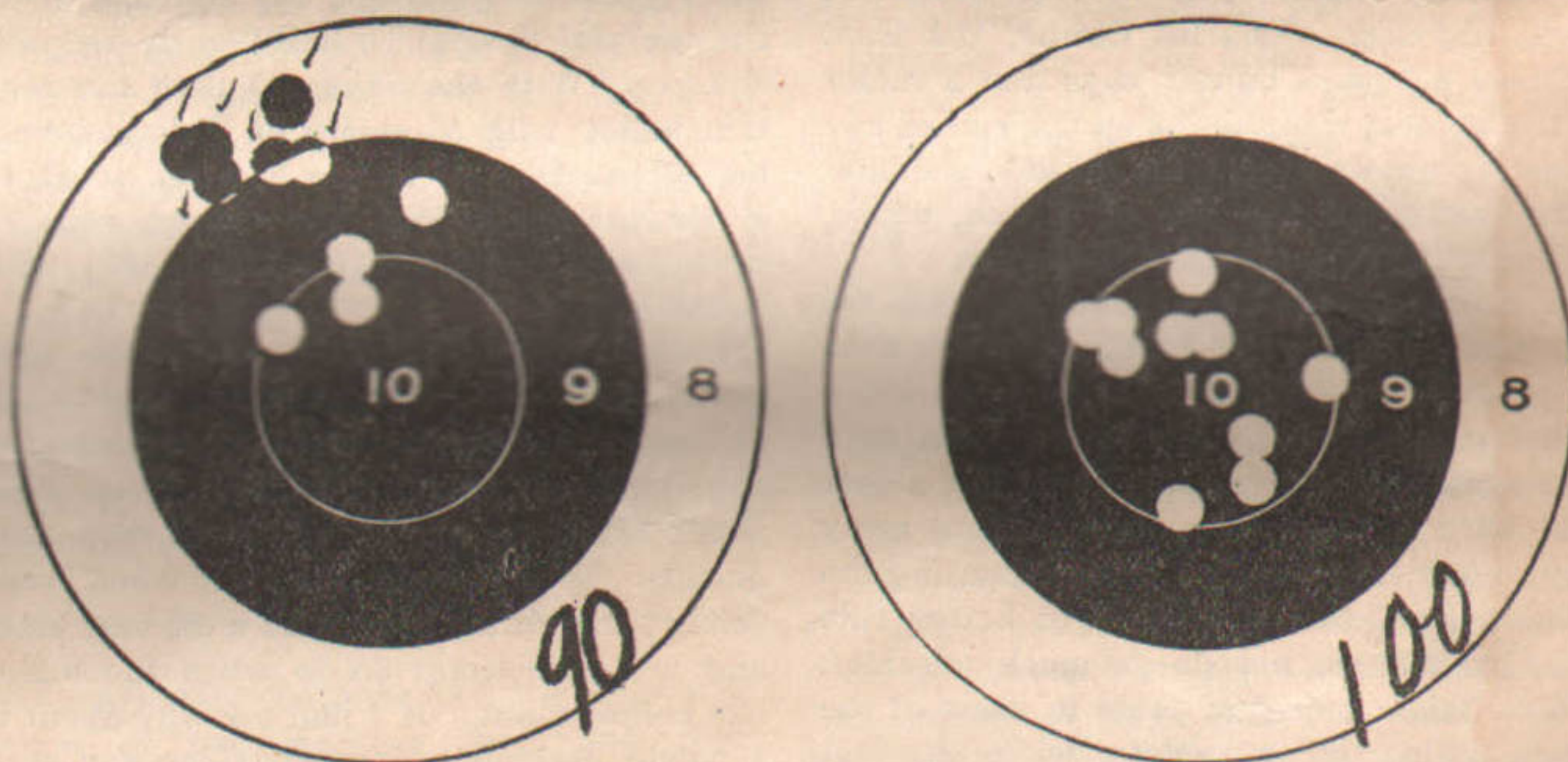
A small bore team match is not different from the big bore, team work and coaching still being the two important elements. And so those who came up to the small bore range at Camp Perry on Sunday morning, September 18, the day for the big match, saw in miniature what had taken place many times before on the big range; that is, a friendly rifle match with another country, the only difference being that in this case the shooting was not done on neutral ground, each team shooting on its own range and the results exchanged by cable.

The Dewar Match course consists of twenty shots by each competitor at 50 and twenty at 100 yards, making a total of 40 shots per man or a total possible score of 400. When the first relay went up in the 50-yard stage, the selected coach went with

had to do was to hold each shot the best he could. Outside of the small effort to eject the fired cartridge and load the fresh one for the next shot, it was not necessary for him to move from his position, which, of course, does not handicap his efforts. As each succeeding shot was fired, the coach would mark the location on the target in front of him. If the shooter was holding at all and if there was any kind of a group, it was a simple matter to get the center of impact.

It is typical of the American rifleman that while he is a good individual shot, he can be quickly converted into a team man, and in this respect we believe that the American rifleman occupies a unique, if not a solitary, position. The United States has sent out many fine rifle teams to compete with nations of the world. We do know that Canada and England, which countries follow our style of shooting more closely than others, always furnish teams of sterling shots. The Latin-Americas have provided some fine competitions, but their positions and system of shooting differ considerably from ours, because we have specialized in prone shooting, while theirs takes in sitting, kneeling and standing. Switzerland and Sweden specialize in the standing position.

In all of the countries named, there are fine individual shots, but there it stops, because either they do not appreciate the importance of team work or fail to understand



(Left) A group which scored only 90 would have made a Possible (Right) had it been centered correctly for lateral and vertical deviation

each man and stayed with him throughout the match, the duty of the coach being to show the shooter the location of each shot, to watch the wind and light for changes which would affect the direction of the bullet, and to lose as few points as possible on the score.

Practically every one of the coaches adopted the same system of working his man, which was to place in plain view of the shooter a paper target, the duplicate of the one on which the match was shot. As the shooter fired each shot, the coach with a pencil would mark the exact location on the target before him. Virtually all the shooter

the system which has counted for so many victories to the credit of the American Rifle Teams. Team work, meaning coaching and arranging the teams into shooting pairs where each man helps his partner, must be credited with all of these victories.

And so it was that each man on the Dewar Team lost his identity as an individual performer and worked for the team score. His job was to hold each shot the same; the coach's work was to watch conditions that would keep the shots from straying out of the center of the black. Naturally, there must be team spirit and unless there is the proper spirit, it is difficult



to get the best out of the team as a whole.

A team of ten men can be handled very nicely, but a team of twenty men such as the Dewar, is a different proposition. A good coach is a rare bird and he is usually a good shot. Therefore, he is likely to be found on the team itself, and that means, even though he is a good coach and a good shot, he is just as much in need of coaching as anyone else. So a coach must be found for him.

The practice followed in the Dewar this year was to use the best coaches available for the first relay, putting up the strongest shots first, and then the first relay to coach the second relay, and the second relay to coach the third. This always gave each relay plenty of rest between strings, and gave the shooter plenty of time to rest his eyes after coaching.

After these extended remarks on this sub-

ject, it might be taken for granted that the whole subject has been very well covered. There is still one point that needs to be emphasized, and that is, our old friend "Center of Impact." It takes as a minimum three shots in order to determine the center of impact. No matter how poorly the shooter is holding, it is always possible to determine his center of impact. Three shots at least should be fired before any accurate sight changing may be done. It is manifest that one shot might be the right or the left, or the top or the bottom of the center of impact, and, therefore, three shots must be fired to determine the center.

There is still one other angle to team work and coaching which should not be overlooked, and that is, the shooter must place himself absolutely in the hands of the coach. The coach, by virtue of his assignment to the duty, must be considered abso-

lutely capable. He is responsible for his man or his pair, and he rises or falls with them. It is an injustice to him not to play fair. Should he tell you to take a minute right or a minute left, then he should be obeyed implicitly. It is a fact that at least two of the members of the 1921 Dewar Team were a bit stubborn and followed their own judgment rather than that of the coach. In each case they met their Waterloo, but fortunately without disastrous results to the team.

To select a team, then, find out who are the holders and the men who will take coaching, and no matter if the shooters be mediocre, give them sufficient time and such an aggregation may be molded into a team of fine shots.

All these remarks may be applied to big or small bore shooting, either indoors or outdoors, and at any distance.

## More About "Small Deer"

BY CHAS. ASKINS

I QUITE agree with Mr. Tedmon that there is a lot of fun in "small deer" shooting, meaning rabbits. I have had more sport, and more good rifle practice out of running rabbits than I ever have had from big deer. Charles Cottar, the East African big game hunter, says that a rabbit is the hardest thing to hit on the run of any game he knows except the dik-dik, a miniature deer about the size of a jack, which, unlike the rabbit, sticks to the brush.

The man who is keen to acquire skill for big game shooting can hardly do better than to practice on rabbits. When he can kill a running jack one time in three shots or a cottontail once in five, a big beast like a deer will have a deuce of a time getting away from him. Personally I prefer shooting the "small deer" to the large—get better rifle practice and do not do so much mischief. I have taken a deal of pride in some of the shots pulled off on rabbits, while the last two deer I killed were simply slaughtered, both under fifty yards and standing. I got meat, but the whole business considerably resembles shooting quail on the ground. I have always maintained that were I in Africa where bucks are thick, a thousand in sight at a time, I'd take nothing that was not running. The same plan is followed with the rabbits, none being taken under a hundred yards except running.

Mr. Tedmon has just about hit upon my idea of good sport with a rifle, and he is equally close to my notion of what the rifle should be. Just as he seems to have done, I commenced such work with a .22 long-rifle cartridge, going from that to the .25 rimfire, and thence to the .25-.20, the .32-.20,

and larger rifles. The best rifle I ever owned for the purpose was the .32-20 Colt Lightning, now no longer made. I have done a lot of shooting with big rifles on the small game, 250 Savage, 256 Newton, Winchester .32 Special, usually with reduced charges. With the Savage I used the regular bullet, with 15 grains of DuPont Number 80 powder. With the Newton, which is a Newton-Springfield, the charge was 18 grains of DuPont No. 80 and a 101 grain bullet.

I made up my mind a long time ago, twenty-five years ago at least, that a .22 calibre rimfire was too small a cartridge for any kind of game shooting. Even such small birds as quail and doves will frequently fly off some distance when shot fairly through the body with a .22 long rifle, and will sometimes do so when the bullet has hollow point. If I had my way about it I would develop a new cartridge for such work, a .22 bullet, about 45 grains, with a muzzle velocity of fifteen hundred feet, and about twice the striking force of the present long rifle. A central fire cartridge is in the nature of things more or less a nuisance in a repeating rifle when snap shooting, owing to the necessity of recovering the shells if they are to be reloaded. Reloading is a necessity unless expense is a matter of indifference.

My present running jack rifle is a .22, but I have frequent occasion to regret its lack of power. Of the jacks hit, I believe that 25 per cent escape wounded. In running shooting there is no such thing as selecting the spot to be hit—a man is pointing well and has some luck if he hits any-

where. Recently the dogs put up a jack which came past me within twenty yards. I shot at him five times, while he covered a distance of fifty feet. The rabbit went on thirty yards or more, stopped and died. I found that of the five shots fired four had struck the rabbit. That doesn't speak very well for the cartridge which was a .22 long-rifle hollow point. I very often hit a rabbit which doesn't show it in the least. I couldn't reconcile myself to that sort of thing except that I have a couple of dogs which are almost sure to catch a jack if they find that he has been hurt.

This gun of mine is a nearly perfect rifle for snap work, except for its lack of power. It was built by the Savage Arms Corporation, of odds and ends, as the late Mr. DeAngelis said, having the Savage automatic action with the barrel and stock of the Model 1914 pump action rifle. It is the only rifle I ever had which would fire fast enough to suit me. The functioning of this gun is certain and the rapidity of fire is limited only by shooter's ability to pull trigger fast enough. I had it mounted with an ivory jack-head, and a large Marble rear peep. The sight is so fast that it could be used on a shotgun for wing shooting without slowing a man up very much. On a rabbit that springs close to the gun I usually get in half a dozen shots if that many are needed, and I might add, frequently miss the rabbit with all of them.

Occasionally I use the gun in crow shooting, placing decoys and calling the birds. If I get one crow in five shot at, it is as good as I can expect to do. Crows are never easy for me, neither are any other kind of birds, but what is the odds? I don't have to kill them. About all that I require is plenty of ammunition and a chance to shoot—results can take care of themselves, and one result is always assured—plenty of good, honest sport. With this little gun I

(Continued on page 8)



# N. R. A. to Stage Hand-gun Matches

BY KENDRICK SCOFIELD

**T**HREE individual matches and one team competition with .22 calibre pistols or revolvers will be staged for N. R. A. members from January 1 to April 1, 1922.

This series of indoor competitions may become the forerunner of corresponding outdoor events, if the N. R. A. shooters indicate that they desire such a program. The hand gun events which are now announced, were arranged in response to a repeated and widespread demand for such competitions, from riflemen who have become interested in pistol and revolver shooting.

In determining the conditions of the pistol and revolver matches, those in charge of the work were governed by the fact that most N. R. A. clubs have indoor ranges equipped essentially for .22 calibre rifle shooting; consequently the use of higher powered weapons such as heavy revolvers and army automatics would involve an element of danger too great to be risked. Therefore, the matches have been restricted to .22 calibre rimfire weapons. This, in addition to eliminating the danger element, will permit participation in the matches by the members of any clubs having a gallery without additional range preparation or expense.

All matches will be shot at the standard distance of 20 yards. This range is naturally easy to obtain by clubs having a 75-foot gallery, and it is believed that practically all clubs having 50-foot galleries can also participate by standing 10 feet in rear of their regular firing points.

The same regulations requiring judge and witnesses to certify that all conditions have been observed in rifle matches will apply to pistol matches.

## N. R. A. GALLERY PISTOL MATCHES.

### Individual Matches.

The N. R. A. Gallery Pistol Matches will be governed—in so far as they apply—by the General Regulations of the Gallery Rifle Matches and the following special regulations:

**Pistol.**—Any pistol, revolver or automatic pistol of .22 calibre, with barrel length not more than 10 inches and trigger pull not less than two pounds. Trigger pulls are to be tested by applying official weight, before each match.

**Sights.**—Sights may be adjustable, but they must be strictly open, must not contain glass and must not be over 10 inches apart.

**Position.**—All shooting shall be strictly offhand, pistol supported by one hand only, arm extended and entirely clear from the body.

**Distance.**—All matches shall be shot at 20 yards, measured from firing point to target.

**Targets.**—Standard American; 20 yards.

### No. 1.—SLOW FIRE, GALLERY PISTOL MATCH.

**Eligibility.**—Open to individual (Life and Annual) members of the National Rifle Association in good standing.

**Time.**—1 minute per shot.

**Conditions.**—The match will consist of five stages, fired weekly, at hours suiting the convenience of the individual concerned; provided, however, that the entire stage be

**P**ISTOL and revolver shooting, having attained such marked popularity among N. R. A. members at the National Matches, it is only proper that the National Rifle Association should give its members a corresponding home-range gallery series for the hand gun.

Since 1919, hand-gun shooting under N. R. A. auspices has been given relatively as much prominence as small-bore match shooting, but without the winter practice and competition season available to the clan of .22 caliber riflemen.

The N. R. A. gallery pistol matches will supply this deficiency in the balance between the Association's activities on the indoor and outdoor ranges. Behind the inauguration of the hand-gun matches there is a strong sentiment among N. R. A. shooters in favor of them. A large percentage of riflemen are actively interested in pistol and revolver shooting and their numbers are steadily increasing.

fired completely the same day. A stage will consist of five sighting shots and four strings of five shots each, for record.

**Entries.**—Entries will be received at the offices of the N. R. A. up to and including January 2, 1922. The competition will begin for the week ending January 14 and will close for the week ending February 11.

**Entrance Fee.**—One dollar.

**Prizes.**—To the winner, a gold medal and the title of "N. R. A. Slow Fire Gallery Pistol Champion." Bronze medals to the nine next in order.

### No. 2.—RAPID FIRE GALLERY PISTOL MATCH.

**Eligibility.**—Open to individual (Life and Annual) members of the National Rifle Association in good standing.

**Time.**—Five shots in 10 seconds.

**Conditions.**—The match will consist of five stages, fired weekly, at hours suiting the convenience of the individual concerned; provided, however, that the entire stage be fired completely the same day. A stage will consist of four strings of five shots each for record.

**Entries.**—Entries will be received at the offices of the N. R. A. up to and including January 2, 1922. The competition will begin for the week ending January 14 and will close for the week ending February 11.

**Entrance Fee.**—One dollar.

**Prizes.**—To the winner, a gold medal and the title of "N. R. A. Rapid Fire Gallery Pistol Champion." Bronze medals to the nine next in order.

### No. 3.—N. R. A. GALLERY PISTOL CHAMPIONSHIP.

(Eligibility, time, etc., as prescribed in Match 1 for Slow Fire and Match 2 for Rapid Fire.)

**Conditions.**—The match will consist of five stages, fired weekly, at hours suiting the convenience of the individual concerned; provided, however, that the entire stage be fired completely the same day. A stage will consist of two strings of five shots each, slow fire, and two strings of five shots each, rapid fire, for record.

**Entries.**—Entries will be received at the offices of the N. R. A. up to and including January 2, 1922. The competition will begin for the week ending January 14 and will close for the week ending February 11.

**Entrance Fee.**—One dollar.

**Prizes.**—To the winner, a gold medal and the title of "N. R. A. Gallery Pistol Champion." Bronze medals to the nine next in order.

### Team Matches.

### No. 4.—N. R. A. PISTOL GALLERY TEAM MATCH.

**Eligibility.**—Open to teams from any rifle pistol or revolver club affiliated with the N. R. A. in good standing.

**Teams.**—Five competitors per team; all scores to count for record. Competitors will shoot on but one team representing one club. Any number of teams may be entered from one club.

**Time.**—One minute per shot.

**Conditions.**—The match will consist of five stages, fired weekly, at hours suiting the convenience of the club concerned, provided all team members fire and complete their scores the same day. A stage will consist of two sighting shots and four strings of five shots each, for record, by each of the five members of the team.

**Entries.**—Entries will be received at the offices of the N. R. A. up to and including February 20, 1922. The competition will begin for the week ending March 4, 1922, and will close for the week ending April 1, 1922.

**Entrance Fee.**—Five dollars.

**Prizes.**—To the winning team, a special bronze medal to each member.



# ARMS AND THE MAN

1111 WOODWARD BUILDING, WASHINGTON, D. C.

SEMI-MONTHLY—ON THE 1st AND 15th DAY

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That a man shall serve his country in time of war is noble, brave and patriotic; but that a man shall properly prepare himself in time of peace to serve in war is all of these things and more. It is noble with nobility which is real, not ideal. It is brave with a bravery which assumes in time of unemotional peace many burdens, among them that of bearing the lack of appreciation of those who do not consider military preparation or training necessary.

## THE "D. C. M." AT THE NATIONAL MATCHES

THE Office of the Director of Civilian Marksmanship is entitled to a full measure of praise for the manner in which it served the competitors at the National Matches.

To have had a well-equipped office on the grounds where information could be obtained at first hand and where small arms, both of approved and obsolete design, could be obtained without a wearisome delay was a very great accommodation to civilian shots.

Here is a brief resume of the activities of this office while the matches were in progress:

Authorized the issue of rifles and ammunition to individual competitors who were not members of rifle teams;

Made sales of rifles, revolvers, ammunition, and other supplies to members of the National Rifle Association;

Issued the Regular Army badges to those civilians who qualified as experts, sharpshooters, and marksmen in firing the National Individual Match.

The Director of Civilian Marksmanship had on hand at Camp Perry a supply of Winchester and Savage, bolt action, .22-calibre rifles, also a supply of .45 calibre revolvers, both single and double action. These revolvers were sold out very quickly and a second supply was obtained which lasted but a short time.

In addition to the sale of a large number of National Match rifles, the following sales were made:

- 175 Revolvers, calibre .45, model 1909.
- 102 Revolvers, calibre .45, single action.
- 26 Winchester rifles, calibre .22, model 52.
- 2 Revolvers, Smith and Wesson, calibre .45, model 1917.
- 2 Savage rifles, calibre .22.
- 29 Krag carbines, calibre .30, model 1896.
- 14 Gun slings, model 1907.
- 2 Krag rifles, calibre .30, model 1898.
- 1 Springfield carbine, calibre .45.
- 1 Ross rifle, calibre .303.
- 5 Revolver holsters, calibre .45.
- 43,900 Ball cartridges, calibre .45, model 1909.
- 2,400 Ball cartridges, calibre .38.
- 2,400 Ball cartridges, calibre .30, model 1898.

A sufficient supply of Regular Army badges for qualifications were on hand and were issued as soon as the official bulletin was published giving results of the National Individual Match. Badges will be mailed to those civilians who were entitled to them and did not call for them at Camp Perry. The following badges were issued:

Expert Rifleman Badges	210
Sharpshooter Badges	40
Marksmen Pins	28

In addition to the above, officials of rifle clubs were given assistance in making out requisitions for their annual issues and opportunity was afforded to civilians to obtain information in regard to the organization of rifle clubs and the supplies that could be furnished by the Government, as well as arms, ammunition, and other supplies which could be sold to members of the National Rifle Association.

## MORE ABOUT SMALL DEER

(Continued from page 6)

have killed jacks and cottontails running, squirrels jumping among the limbs, prairie dogs, muskrats, and flying quail, crows, hawks, doves, and some other birds—never was able to hit a duck, as it happened. None of the kills on winging game occur with any great frequency.

A fancy rifle shot, a professional, told me that he once killed seven swallows in a hundred shots. I tried that, and had a lot of fun out of it and never killed a swallow. Suppose it would have been a violation of the law if I had killed one, but I didn't. Where the sport came in was in seeing how close I could hit and where the bullets went. I stood on the bank of a pond and the birds, hundreds of them, winged back and forth, circling in all directions, some-

times nearly stopping still. The birds were so close to the water that every bullet registered just beyond them, and I found that I could shoot awful close without hitting one. The bullets would go above and below, ahead and behind. One thing I did learn was just about how much to lead a passing bird to put a bullet right at him. If those swallows had only been the size of a prairie chicken something would have happened to them.

The best jack rabbit shooting that I ever did was with the 250 Savage lever action, using full charges. I killed five jacks in an afternoon, making a double where two jumped at the same time from a small weed patch. On that particular afternoon I hardly missed a rabbit. Such a thing has not happened since. The longest kill was under fifty yards, and the most of the rab-

bits were under thirty yards, where it was only necessary to hold for the front end of them and not take much lead.

When it comes to shooting at a jack rabbit around a hundred yards, passing, it is a good deal like shooting at the swallows. I usually attempted to lead about six feet, if the jack was going full speed, and that meant landing the bullet pretty close to him, not hitting him. The longest kill I ever made with the Savage was at one hundred and twenty-five yards, going straight away. The longest kill that I ever made with any gun on jacks was one crossing an open field, distance when paced two hundred and four yards. Snow was on the ground, and I killed with the fifth shot from the 256, full charge. Of course I could see where the bullets were landing, and kept getting farther and farther ahead, until the shot



that killed him was estimated at being given a lead of fifteen feet. Sure, it was more a fluke than anything else.

A jack rabbit is a pretty fast chap. At fifty yards, twenty-two calibre, beast running across the range, the lead must be around three feet. Missing at that, where I am concerned, is not so much faulty lead as shooting over and under. One shot will go under and the next will go over, then behind and in front, and when a hit comes it wasn't any better held than the misses—my experience. Half the time our jack is above his line of flight and half the time he is below, and who is to tell just where he will be when the bullet gets there. It is all a mixture of good holding, of scientific calculation, of good judgment as to speed—for the close shots that miss—for the hits, all this plus luck.

I once killed a coyote running at one hundred and thirty yards, with a three thousand foot velocity missile. The beast had been frightened by some hunters and dogs, and was moving fast, at right angles. I meant to hold four feet ahead, but inadvertently swung in a couple of feet further ahead than I meant to. When the gun cracked I was certain that I'd missed him, but he disappeared, and I found that I had hit him back in the flank, almost tearing him in two.

I have found when trying one kind of bird or another on the wing that the amount of lead which can be taken, sometimes resulting in a kill, is dependent more than anything else on the size of the bird. On doves, if the distance is so great as to necessitate a lead of more than six inches, a miss is nearly certain. On blue jays and crow black birds a lead of a foot can sometimes be made and the bird hit. With crows a foot and a half is about the limit, and most of the kills will be made on crows when the lead is less than six inches. The minute daylight in any quantity begins to show between the sights and the quarry, look out for a miss.

My snap shooting with a rifle has been a source of great entertainment to me, and has been followed for that reason only. Nevertheless, there is utility in it. The man who can kill a running jack, a cottontail or a bird on the wing, with a rifle is not going to miss a running deer very often or a wolf or a lion, unless he gets excited and cannot shoot. I have found that the snap shot with a rifle is the dangerous man on game. He is not the sort that gets buck fever—he shoots altogether too quickly for anything like that. The man who cannot do himself any sort of justice in game shooting is the first rate target shot. He knows how to hold and how to pull—doesn't like to let off until he knows he is right. He is not accustomed to the position he probably has to take, the light may be bad and the target uncertain, he potters and gets worried at last for fear he will miss getting a shot altogether, and he lets go without making his customary bull's-eye.

In closing I should like to commend the

position taken by Mr. Tedmon. The .22 calibre is a fine little target weapon, but as a game rifle it is a pity to recommend it. If game is to be killed regularly and cleanly, every hit through the body almost instantaneous death, the .22 is not large enough for anything except English sparrows. I know that some man in New Brunswick or somewhere is said to use a .22 rimfire for

all his big game shooting, including moose, and some Missouri lad describes killing deer any timber wolves with a .22 long rifle—all of which may be true enough, but I find that in shooting doves about one in five will fly some distance with a longrifle, hollow point bullet squarely through him, and about one in ten that has been shot through the rear half of the body will escape.

## Hot Water for Gun Cleaning

BY VAN ALLEN LYMAN

AS A BOY the writer was raised on a muzzle loading shotgun. Cleaning was done by taking the barrels from the frame, immersing the nipple ends in a tub of hot soapy water and pumping water in and out by means of a swab on the end of a cleaning rod. There is no question about it, that hot soapy water cleaned the barrels and cleaned them properly. Incidentally, if the swab fitted properly one could squirt water through the nipples clear across the road. The muzzle loaders would accumulate lead in the barrels just as the breech loaders of today do and a scratch brush was used to remove it, just as we use one now under like circumstances.

It is a long way from the muzzle loading shotgun of fifty years ago to the ultra high velocity rifle of today, but the fact remains that what was good medicine for one is good medicine for the other, though the application is somewhat different and the effect striven for is not the same.

With the old time arms we sought mechanical cleanliness; in the present day we fight against rust caused by chemical action.

If boiling hot water is available, and it generally is, there is a simple and positive way of doing a proper cleaning job on your modern rifle. Merely pour a lot of boiling water through the barrel, grease it, and put it away. No second or third cleaning, no worry, nothing more. The job is 100 per cent finished and the rifle simply will not rust inside as long as the grease remains on, for the boiling water has killed any tendency to rust. Simple and seems too good to be true, but it really is.

This is not a new idea by any means as applied to high pressure rifles. The British use hot water regularly on their rifle ranges, having big kettles of boiling water right at hand and dippers to handle it with. Not a few American riflemen have been using this system for years and it ought to be more generally used than it is.

To do this conveniently a special funnel is needed. One takes an empty shell adapted to the rifle in question and cuts the head off, often an inch or so of the muzzle as well. Into this is soldered the end of a tube which is long enough to reach back through the

receiver and on the end of the tube is soldered a small funnel. For a funnel one can frequently use to advantage an oil can with the bottom cut out and spout removed, the tube taking the place of the spout. This gives a nice "take down" arrangement, convenient for traveling. In effect we have a



The breech funnel for hot water cleaning

funnel with a long spout which ends in a cartridge shell fitting in the rifle's chamber. By the use of this, hot water can be introduced in the bore without a drop being spilled into the mechanism or elsewhere.



Where the breech bolt cannot be removed, that is, for a lever action repeater, the same idea can be used, but the tube must be bent or offset to allow its introduction into the rifle's chamber. The system works perfectly with the .22 rimfire also, but in this case the .22 shell is soldered inside a tube instead of the reverse, and it protrudes about half its length. Go to a Ford automobile repair shop to get a little tube at a reasonable price.

For cleaning, first wipe out the bore with a damp patch or two to remove residue.

Then put the funnel in the breech and pour a couple of quarts of actively boiling water right through the barrel; have the water boiling furiously when you put it in; the heat with the water is what does the work. Run a few clean, dry patches through the bore and then a patch saturated with gun grease. This is all there is to it; the gun may be put away with the assurance that there is no second cleaning necessary, for the boiling water effectually anticipates and stops any tendency toward future rusting. One who has never tried this method will be

surprised at the amount of heat a barrel will absorb from the boiling water. It will get so hot that one cannot well hold it in the bare hand and this same heat certainly helps in the even applying of a coat of heavy grease inside; makes it melt so that it flows evenly.

If a barrel is metal fouled it will, of course be necessary to first remove the fouling by either a scratch brush or by ammonia solution, depending on how bad it is. Then give it the boiling water as described. Always at hand, cheap, and effective.

## On Some Shooting Equipment

BY EDWARD C. CROSSMAN

I PUT my name to this story, and then spread my shame abroad in print, knowing full well that through it I shall be classed as a tenderfoot, likewise tender at the elbows, the knuckle of the left hand and the right lower jaw. Despite all this, I am satisfied that I have enough fellow unfortunates to justify my confession, if such confession lessen in any manner their abrasions, bruises and facial impairments.

I have shot the Springfield from its first appearance in the militia up to the time I got into the Army, and found that Army life for an officer meant the minimum of shooting and the maximum of watching somebody else do it. Likewise I traveled the long road with the Krag, and before that spent three years with the festive Lee-Remington .45, which I issued to the helpless Naval Militia in the days of the Spanish War. Furthermore, I did my first qualifying with the Texas Grip; so I have followed the game of the military rifle quite extensively enough to learn how to avoid the slings and arrows, not to say the brickbats, of an adverse fate when it comes to rifle shooting.

Yet, as I say, I confess to soft and tender spots when occasion permits a return to the good old game, nor did I ever get away from them in a long summer's shooting such as we used to enjoy before the war. The shoulder is not one of them, wherefore insinuations as to faulty holding do not lie, because faulty holding usually results first in a bruised deltoid and its neighbors.

Do I lie down and shoot a string prone—which the adverse fates have forbidden since Sea Girt of last year—and perform in what is practically a state of nudity, so far as any pads are concerned, then I begin to learn that I have tender spots, as follows:

Elbows; triceps of left arm from sling cutting; starboard quarter of lower jawbone; left forefinger from pressure of hand against lower band, left wrist from the tension of the sling.

I don't mean that I am black and blue, or abraded or otherwise on the road to ruin, I merely realize that some slight interposition of a little felt or leather or something would, in the course of a day's shoot, add to my comfort. After a long grind of many days' shooting I think most shooters will find some or all of these points a little touchy, and some suffer with their shoulders as well, in which I am lucky enough not to be affected.

A week's steady shoot will usually result in a very perceptible welt along the back of the left upper arm, if the shooter pulls a heavy sling, as he ought; in a bruised sensation at the knuckle of the forefinger of the left hand, and not infrequently in a tender wrist below from sling pull. The elbows naturally wear through very promptly if nothing is provided to insulate them from the cold, hard ground.

And there are, of course, the Spartans, the tough guys of the rifle world.

My friend Major Whelen says that he has never used or needed a shooting glove. He is like me, in the past few years at least, in that he hasn't had occasion to use one, but I'm talking about these real, honest to gosh team shooters who come to Perry and weep bitter tears because they have to stop shooting at noon and at night, when there is still some ammunition left down in the ordnance warehouse.

My friend William Libbey of Princeton, he of the white goatee and the benevolent smile and the kindly disposition, lectured to his classes at Camp Perry in 1918 to the effect that elbow pads were not a necessity; nay more, they were, in the Colonel's opinion, something like a lace handkerchief protruding from the wrist or a powder puff sticking out of the vest pocket, sort of—you know—sissified. If any ambitious person, said the colonel, would rub his elbows a few moments each day prior to the opening of the shooting season, he would develop shortly such gol-darn callouses—the Colonel didn't say gol-darn, I put that in—such callouses as would make elbow pads

as superfluous as a refrigerator on a Nome Christmas Day.

The person so trained, intimated Colonel Libbey, could then lie down on broken bottles and dornicks in peace and comfort, and if a bottle wasn't broken to suit his particular fancy, he could swat it with one of "them elbows" and reduce it to the proper fragmentation.

Taking for granted the fact that the Colonel practices what he preaches, there has always lingered on my mental palimpsest the picture of a Princeton professor with a white goatee and a kindly smile in training just before the shooting season. Behold then the trainee hardening the elbows by pushing them hither and yon around the classic shades of Old Nassau. Sort of a wheelbarrow movement, you know; a gentle dog trot with the elbows resting on the ground before one and sliding along over clod and stone and hard sidewalk until after days of such training the elbows will pass the test, they will strike sparks from a blacksmith's anvil. Then is the festive elbow fit to engage in the gentle sport of rifle shooting on the smooth, soft, green stretches of that beautiful Sea Girt.

A lot of us, however, are too lazy for this sort of thing, or else lack the forethought that will start early enough to get in the right trim. For such persons, the weak willed, the weak minded, and the indifferent, I write this screed, because assuredly while leather and felt are buyable, any training my elbows get will be entirely incidental to shooting with what ought to be adequate padding on them. I have seen persons of Spartan nature, but indifferent judgment, lay themselves down on a nice hard rocky firing point, with one thickness of Madras shirt between the elbow and the rocks, and I have seen them shoot a score through, but I have seen no such a glutton for punishment as would keep this up indefinitely. I know that to whisper it is lese majeste, but with Major Critchfield's attention momentarily centered elsewhere, and Colonel Mumma over in that dear Ioway City, I'm going to point out that there are spots on the Camp Perry firing point which but remotely resemble a bed of rose petals or goose feathers.



Having thus pointed out all the black specks floating before the eyes, that dizzy feeling, and the all-gone sensation after refraining from food for a week, in good old patent medicine style, I shall now proceed to point out some palliatives for the troubles of the shooter.

In days gone by I used to pad flannel shirts in the endeavor to keep checked butt plates from rubbing the hide off the shoulder, the sling from cutting off the left arm, and the ground from flaying the elbows. I am satisfied, however, that the padded shirt is not the best bet.

In the first place, to hold the pads and give reasonable assurance of fair wear for the investment you have to use a shirt of good heavy flannel.

In turn, on a hot summer day it becomes bedewed to the extent of saturation with the wax sweat of your brow and the overflow meeting held on other portions of your anatomy. The evil day comes when you have to have it washed, particularly if your family is infested with persons of the female sex, because it has been noted that for brutal frankness in regard to such personal matters as having a good old ripe shirt washed before the Health Department breaks in, the female sex is much worse than the male.

If the leather of the pads is not the right sort, as it usually is not, the shirt ceases to be more than an object of curiosity as to how much flannel a shrinking bit of leather can gather under it. A laundry takes a fiendish delight in removing the pads and sending them home as separate components of the garment.

Likewise, when you are through with your score for the time being, your shirt, sodden as it is, is right with you. Tent or other spot where a change is possible, is miles away, and so you perspire richly with that hot and perspiring affair clinging to your frame, and the padding not aiding in the ventilation.

Wherefore eight years or so ago, I "plumped" for the shooting coat. Nay, misunderstand me not, I do not refer to the handsome belted affair with the pleats and the class, which our friend Newitt would like to see our shooters wear, that the spectators may not mistake them for bums just in off the railroad. That is fine for the hours after 6 p. m., but not for shooting.

What I did was to rustle from a Marine willing to part with any or all of his wardrobe for a suitable number of cesterces a laundered canvas coat such as the Marines used to wear. With this as a foundation, I started to make a shooting coat.

I had some good, heavy, buckskin at home, tanned with a peculiar oiled finish, and apparently well able to resist wear. It was not the soft and sleazy sheepskin which so often is sold as buck, but good, heavy buck hide from the back of the buck, which I myself removed from him. This, put on with the dressed or shiny side out,

formed the leather portion of the padding.

On the right elbow went a piece ten inches long, and running two-thirds of the way around the arm. This sounds like more than enough, but experience dictated it. In Surprise Fire it happened now and then that on uneven ground the elbow hit where pad was not, which is particularly likely with a shirt, and I determined that this would be one mistake remedied.

Under it I had the leather outfit doing the work put about a quarter inch of felt. I think that more could be used with comfort. The leather and felt ran to within four inches of the edge of the coat cuff.

The left arm is largely buckskin. I got weary of having my triceps sawed off by a tight sling, being a person whose proportions in the fat line are not exactly those of Falstaff, and I decided that, fall where it may, I'd head off that blasted sling from my shrinking arm muscles. There is another reason, this being that it is easy to get the sling in such position on the unprotected arm as to start a pumping, trobbing feeling from interference with some artery, and padding obviates this.

Wherefore, the left sleeve in the rear is covered with a piece of buckskin, felt padded below, nineteen inches long, and running from shoulder seam to within four inches of cuff. This takes care of sling pull and elbow. For eight inches above the elbow this also runs clear around the arm. Below that it runs about two-thirds the way around like the right pad.

Understand these are not the huge, bulky sheepskin things, it is more like a leathern sleeve, with a quarter inch of felt between leather and coat. I have shot this coat five years or more steadily, and some at Camp Perry last year, and at Sea Girt to refresh my memory, and I see no reason for changing the sleeves. I can slip the sling up the arm, and then set the arm back into it until it creaks without being uncomfortable.

I do not like much padding at the shoulder. With tight sling, and in correct position there is not enough recoil to justify the stuff some shooters load on the right shoulder. The objections to bulky padding is that you cannot feel the butt plate, are not sure of getting it to the same spot each time, and there is thus danger of changing your point of impact by various support to the butt of the rifle.

When a lady of extremely light build can fire match ammunition day after day with buckskin and about one-eighth-inch of padding over the shoulder, I hardly think the more favored huskies who follow the game need much more than this. Mine has less than this, a couple of pieces of such thin felt as they used to line hides for the floor, and light buck, being the extent of the padding.

The shoulder pad offers chances for fine mistakes. I made them.

The coat maker must keep in mind the

fact that the coat is used in two distinct positions, one of them off-hand, the other prone, and that the butt plate does not strike the coat the same spot in both.

The pad should run to the top seam of the shoulder of the coat, must run half way across the right hand breast pocket, must run well out on the arm, five or six inches beyond the junction of sleeve with coat, and must run well down into the arm pit. The piece now on my coat, which is satisfactory, is irregular in shape, but is nine inches from shoulder to bottom, and is eight inches the other way—breast out to the end of the portion on the arm. The rifle butt can plainly be felt through it, as there is no stiff bulkiness, and the butt goes to the same spot each time.

I saw just the other day an alleged shoulder pad made up especially for riflemen, and sold by an accessory dealer, which was of about the size and shape of a horse collar, a thick, stiff, slippery leather monstrosity, which would add three-quarter of an inch to the apparent stock length, and which effectually insulated the shoulder from any knowledge of where the rifle butt was placed. There is no occasion for this. A tight sling, and a correct position means that the shoulder absorbs little punishment. A great deal of the shock ought to be caught on the left hand.

The question of whether a coat ought to be tight or loose across the back is worth trying out. Some riflemen believe they hold better with a considerable strain between the shoulders. It costs little more to have a piece of web strap sewed into the back of the coat, inside, running from one shoulder or arm seam to the other. A buckle can be put in to permit of different adjustment.

A coat such as mine, is, of course, warm in the sleeves, but the instant you are through shooting with such a coat, you slip it off, and in your light cotton shirt, quickly resume normal temperature, which, it is sure, you cannot retain while firing prone at Perry in August, or even September, while the rains are absent. It is a mistake to pad up a wool coat, such as the uniform blouse, done by some soldiers. This is bound to be unmercifully hot, and the wool is no stronger than the canvas or drill of the light coat.

The upper-cut to the jaw is not so common among riflemen, but there are plenty who cannot escape it with the miserably designed service rifle stock, which is to my opinion the poorest stock of any military rifle in the world. Just the other day I examined a couple of rifles from the Bull Run battlefield, which had been picked up years ago, and stood, weather-beaten and grey on the porch of the stone house. One of them had been made at Springfield, the other, the same type of percussion lock, had been made in Germany, and bore the German "D. R." and the German proof marks.



Either one was better stocked than the present service rifle, a higher comb, gracefully shaped, and not located half way back to the butt plate. The present service rifle stock bears not the slightest evidence of ever having been considered by a person experienced in rifle shooting, however much the board may have gravely looked over stocks laid before it.

A piece of soft leather with two straps, to go on the rifle, the leather carrying a chamois-covered pad a half-inch thick, filled with well packed cotton or felt, and about 3x3 inches, adds immeasurably to the comfort of the jaw-pounded rifleman, and with the telescopic sight perched still higher above the stock, gives the face and head absolute steadiness. Such a pad, for instance, has a leather foundation 6x4 inches, with two straps sewed to one of the ends—the six-inch way—and two buckles sewed to the other. It is thus strapped on the stock, buckles and straps on the right side of the stock, pad on the left. It stops the nasty pounding of the jaw by the overflow comb, and for long range, particularly with telescopic sight, it is the difference between craning your neck to see a performance over somebody's head, and leaning comfortably back in an orchestra chair, outside of the jaw contusions from each shot.

All the pad does is to take the place of the comb which ought to be there, so it is hardly to be considered as an artificial aid, however the rules for the rifle as issued may read.

The left hand, properly set up into the sling swivel and taking the swivel against the forefinger, absorbs quite a bit of the recoil. Likewise most shooters wear a callous on the knuckle in a little time, the wearing process being somewhat uncomfortable.

The pull of the tight sling usually leaves a red and sore spot on the right side of the left wrist as it faces you in holding the rifle. Neither spot is fatal, but there is no use in enduring discomfort when comfort may be had by the mere addition of a glove.

Wherefore most experienced riflemen wear a shooting glove, in spite of which there is no such thing on the market as a shooting glove. The Marines get a variety of clumsy, semi-mitten gauntlet glove, in which the thumb and forefinger are separate from the rest of the mitten, and, of course, use the left one for the shooting kit. Some of them cut off the tips, letting the finger ends out for air.

I used one I borrowed from friend Renew last year at Perry, having come away without a regular shooting outfit, and so far as holding the rifle was concerned, found it quite comfortable. The gauntlet portion prevented cutting by the sling, while the mitten was heavy enough to take up recoil thrust. The objection was

that it was clumsy, big and hot, refusing to go into a shooting bag, and interfering with the sight changes or micrometer setting until it was removed from the hand, which meant getting out of the sling.

For a couple of years I had thought that any scheme I had seen for the protection of the left hand could be beaten by deliberate thought and design, and in the fall of 1919, while in New York, I suggested a form of rifle shooting glove to Abercrombie & Fitch. A year later they had not gotten much action in the matter, and there was no glove available to try out at Perry, but they finally turned out a finished sample, which I have tried out and found about right.

They have experienced so much trouble with their glove makers, and so much delay has resulted, that I finally sent to the Morrison Ricker Company of Grinnell, Iowa, and got them to make up the glove I had in mind. It seems to be entirely satisfactory, except that some riflemen may prefer a trifle more padding.

The Morrison Ricker glove, which they say they will be prepared to furnish for about \$3, is made in black coltskin, and can be washed in water or with gasoline. The glove, as it seemed to me to be right, has a longer wrist than the ordinary street

glove, to protect it against sling cutting, yet it is not the clumsy gauntlet sort.

It is padded at the knuckle and the backs of the forefinger and second finger, and down across the back of the hand along the line where the sling passes, to and including the right side of the wrist as the palm is toward you. I don't mean by this any sort of a boxing glove appearance; it is practically driving or street glove in size and appearance.

The fastener strap is on the front of the wrist. The palm is ventilated.

I put the padding by trial where the sling and swivel seem to make contact hardest with the hand. No one glove would suit everybody, but it is a good, substantial left-hand glove, padded where experience seems to indicate padding is needed, and at a reasonable price, which is at least a step in the right direction.

I, of course, entirely appreciate that these things could not be used in battle, which seems to be the criterion on which a lot of these "hardy buccancers" judge shooting accessories for a National Match. If battle equipment, however, is to be our standard, then each man at the National Matches ought to be limited to a rifle, one bando, and a can of foot powder in case the battle goes against our side.



## Rulings and Decisions Rifle and Pistol Gallery Competitions

For the purpose of acquainting clubs and individuals who participate in the various matches of the 1921-1922 gallery season, with such official rulings and decisions as may be made from time to time affecting the conduct of the series, this Department has been established.

**W**HETHER it is possible for an individual member of the N. R. A. not affiliated with any rifle club to participate in the matches is one of the first matters upon which information has been sought. Of course, the individual competitor may compete, even though, as in the case of Sergeant Keller, he is at a post where no rifle club exists. Here is Sergeant Keller's letter and the reply thereto:

It is my desire to enter in some of the individual matches as described in *ARMS AND THE MAN* of October 15; and wish for some information. I do not know how many members of the National Rifle Association there are at present here on the range at Parris Island, but there is no rifle club near here in which I can shoot. Will it be possible for me to participate in these matches, and, if so, how can I have my scores verified? I am an annual member in good standing.

CLYDE H. KELLER.

Rifle Range, Parris Island, S. C.

Answer: Being an annual member of the N. R. A. permits you to participate in the Association's matches until the close of the current year. In order to participate in the competitions shot during 1922 it will, naturally, be necessary for you to reaffiliate for that year.

The verifying of your scores is a simple proposition. Arrange to have some officer of your detachment witness your shooting and certify to this effect on the official targets. We have no doubt but that several

other individuals stationed at Parris Island will desire to compete in these matches, and we would suggest that you arrange to do your shooting together, which will simplify matters for the officer acting as judge. Would it not be a good idea to organize a team and join as a club of the military class? This will permit you to participate in some of the various gallery team matches.

**A** SHOOTER who is not an individual member of the N. R. A. desires to compete in the series. The individual matches of the Association being limited to its members, it is naturally necessary to qualify in this respect before an entry will be received. Requests for membership application blanks will bring the forms by return mail, in plenty of time to permit the applicant to enter the matches.

**C**OMPLETE rules and regulations governing the rifle and pistol gallery competitions for 1921-1922 will be available in pamphlet form within a short time. These pamphlets will contain entry blanks for the matches and application blanks for individual membership. They will be distributed immediately to clubs and individual members of the N. R. A. and additional copies when necessary will be sent upon request.

The edition of *ARMS AND THE MAN* containing the match regulations has been exhausted.



# With the Small-bore in England

By A. G. RICKARBY

*This is the sixth of a series by Mr. Rickarby, Editor*

THE big small-bore meet of 1921 has come and gone, leaving behind the memory of a very pleasant meeting. Possibly for the last time, before transferring to its new range at Perwale, the Society of Miniature Rifle Clubs used the well-equipped ranges at Ham and Petersham, and it was only fitting that the meeting should have been such a great success. The period of shooting ran from Thursday, July 21st, to Thursday, July 28th, inclusive, and right throughout the weather was uncomfortably hot, except for the one or two occasions when the wind blew. The number of targets passing through the record offices ranged from 12,000 to 14,000, which kept the statistical end of the business from "resting on their oars."

Not since 1915 have we had such a large entry and during the meet some 313 different competitors from all parts of the country vied with one another for premier positions in some 38 different events which went to make up the programme. All comers could shoot in the bulk of the events, but certain numbers were restricted to police, ladies, boys, inexperts, etc., but all who had something to shoot had quite a busy time.

As usual the first day, like all other meetings, was dull and quiet, the men preferring to get steam up gradually, but those who did summon up the pluck to get a few of their pile of tickets shot off, wished they had elected to be squadded later on. The best shoot of the day was a 294x300 through the ranges of 25, 50 and 100 yards in the "Bell" competition, an event in which the winner of the trophy always requires a pantehnicon to move it, unless he decides to leave it in the care of the S. M. R. C. until shot for again, and many winners have done that. The winner last year was a Scotchman and to get the trophy back to its home, nearly used up all the prize money that goes with it, for carriage charges.

One of the chief events of the day was the announcement that prices of .22 target rifles had been reduced in price by 33 1-3 per cent, accompanied by the cuss-words of those who had just invested in a new shooter for the meet and the dance of those who had thought about it, but had not taken the plunge. Those fellows reasoned that their old gas pipes had at any rate won them a £3 prize or its equivalent, even if they did not shoot much.

Saturday, 23rd July, was a big day when the Vickers Challenge Shield, a squadded shoot through the ranges, was begun and finished all in one day, an innovation for the S. M. R. C. meetings. The wind blew hard and with it came 8's and all sorts of

things, while the light was none too good, but no rain—hadn't seen any for months and the novelty of a drop or two might have stopped the shooting. Well, the shield was won by a policeman with a score of 295 and with an old gas pipe he gave five shillings for! You should have seen the faces of the chaps who had forked out their £8 and £9 for their guns. Another policeman, a club mate of the first ('twas their day out), came in second, with 293 and the lowest score to crawl into the prize list of 32 prizes was 288.

In the evening, with the flag still standing out straight, we shot the "Sharpshooter" competition disc—breaking at 100 yards, by teams of four, in which the "A" string of Wimbledon Park put out Addiscombe R. C. in the final round. If your disc does not come down you have to feel all round for it and all the time you are doing this the other chap has possibly bagged his and out you go.

The Remington U. M. C. competition, a 50 and 100 yard shoot, ten shots at each, with an inner carton of half and one inch respectively, giving an extra point at each range, puts before one a possible total of 110 at each range. W. Cornish of Kensington R. C., accomplished the best 100-yard shoot by making 107, with 8 centrals, one ten and one nine, but he "bust" at 50 yards with a 95 and only finished seventh in the list, three men with 204 each out of 220 splitting the first, second and third prizes.

On the Monday the wind was as bad as it could be, all over the place—fish-taily and what not, much to the discomfort of the poor beggars who were squadded for their 100 yard targets upon that day, and many did in their grand aggregate in consequence.

Tuesday, a few minutes' drizzling rain first thing—a really wonderful sight—then King Sol beats down as hard as ever, the bull dancing a 100 yards and shots in the while quite "unpickupable." The International Match between England and Scotland was shot at 4 p. m., the home country getting there by 53 points, the ten men averaging 286.6 versus 281.3, by the men from across the Tweed. Each man fires ten shots at each of the distances, 25, 50 and 100 yards, no practice or sighting shots between ranges—thus making it thirty consecutive rounds and a shooter needs to know his elevations well. A. Wright topped Scotland with 294, one under record, and W. T. Norton topped England with 292x300.

As usual when a meeting extends over a week someone gets a "jammy" time and those who were squadded on the last days

were the lucky ones, all having a dip in the jam pot and up the scores began to jump. Long faces watched the score-board—those johnnies who had already completed their shoots—and as the scores came up the dismal ones watched theirs slither away down the list from positions that might have been worth a few pounds to one in the shillings, or even to one where the prize be "nowt."

The annual pow-pow of the "Centipede" Club took place on the Wednesday. The club I might state is composed of one hundred "legs" or members, a head, the President and a tail, the Secretary, or pen pusher of the club. The badge is, of course, one of those creepy, crawly chaps with a hundred legs, after which the club takes its name. Each "leg" or member has a number and before he is invited to become part of the insect he must have done something in the interest of rifle shooting or won a certain amount of fame as a rifleshooter. It is not a club formed for the purpose of garnering in the best shots of the country, and as a club we do not enter any competitions for fear outsiders may accuse us of having this as a motive, but it is essentially a club, bringing together many old friends, and the views of the members upon various subjects discussed at meetings carry a certain amount of weight with the powers that be, and at this year's pow-wow we discussed the hindrance to rifle shooting progress caused by the Arms Act restrictions, allowance of concurrent shooting in certain competitions, selection of International teams and other matters.

Final for "Queen Alexandra" Cup competition was shot on this day between the six men from each of the counties of London, Surrey, Essex and Berkshire, the first named team getting home by two points from Surrey after having put up record shoot of 2390. This competition is fired at 25 yards and another record went when H. Gough of Cheam tacked on a total of 407, made up of two 99's deliberate, one 99 and one 100 each in 90 seconds, and ten hits in a minute, this total beating the previous best of 404—only single loading rifles are allowed.

A feature of the meeting was the splendid shooting of a pale-faced young Scot, A. Wright by name of Falkirk, and he followed up his success in Scotland a few weeks back when he won the Grand Aggregate—by winning the Grand Aggregate of the London meeting with a fine total of 1559 out of a possible 1620, including the rapid and deliberate targets in squadded events only. Next to Wright's shooting came the performance of a schoolboy, F. C. Hale of Bearwood R. C., who set to work and took the Open Championship event after shooting off a tie with two others, and for his tie shoot at 100 yards, he ran up a really fine 98—quite easily, and all in possible group. This lad secured a place in the English team vs. Scotland, and also in the British team vs. you fellows.



It is curious to add that not a single 100 yard possible was made during the whole of shooting, although there were numerous 99's, yet the general average shooting was above record, and scores that have hitherto won championship gold medals did not gain a prize in the championship event, although some 32 places were open to them.

The Thursday saw the International trials to select the 20 men to compete

against you in the Dewar event and the wind blew terribly; well, one couldn't call it a trial and as a result certain members got in by fluke shooting, and of the 40 men shooting the final trials, only six reached the aggregate in the 380's, the top being 387, two 382's, a 381 and two 380, making up the six. The next day the match itself was shot, but what scores were made—well, I must say, wait and see.

three the tent ought to be 9½ by 12. With these dimensions it will contain one double and one single bunk, your stove and all else that has to stay inside. Four foot walls are desirable in each case. Even the larger of these tents when compactly folded makes but an easy pack for one man.

There is an endless variety of camp stoves, and you can get nearly anything you want. Again, much depends on whether or not you are going to stay in one spot. If so it will pay to take a reasonably large stove. One I have in mind that has proved its value many times, weighs but thirty or thirty-five pounds. It is eighteen inches high, with the legs; eighteen inches wide, and twenty-seven inches long. Folded up it is 27 by 18 by 4 inches. It has four cooking holes and a good oven, and burns 16-inch wood. The pipe telescopes, and the whole thing can be put in a canvas bag and carried on the back by a shoulder strap arrangement. Be sure to sew a pad on the bag where it rest on the back.

For the lone camper there is a handy little sheet iron stove weighing about ten pounds. It is 26 inches long, 12 inches wide and 11 inches high, and burns 10-inch wood. Then there are numerous oil stoves that have many virtues; they surely are less apt to cause forest fires, because with them the camper never leaves fire behind him. As I have intimated, the selection of a stove need not be a big problem, because a dealer can supply one to suit any purpose.

Now for your bed. My advice to the winter camper is to sleep high and dry. Sleeping on the ground in summer is all right, but it's a bit too heroic for most of us in the winter—and more or less dangerous. Doubtless the best portable bed is the folding canvas cot, and if your camp is to be a permanent one and is not too far away you would be wise to depend on it. But you may with entire safety go without any kind of bed; you can build one in camp. A. T. Strong, an expert on campcraft, gives the following method, which I heartily endorse:

"Construct a frame-work by driving four stakes, roughly, three inches in diameter, into the ground and nailing upon the tops of these, two cross poles of the same original size, but flattened on the upper and lower sides, and as long as the intended width of the bunk (thirty inches is a convenient width for a single and forty-two inches for a double bunk). Small, straight, springy poles should then be nailed, lengthwise and about an inch apart until the bunk is entirely covered. A better job will result if the little poles are alternated, butt up, butt down, as most saplings are considerably heavier at the butt and laying them all one way would cause the bed to finish unevenly. Next put two more short poles about two inches in diameter across

(Continued on page 18)

## Winter Camping

By L. E. EURANKS

MANY of the year-round sports of today were a few years back confined to certain seasons. Indoor baseball, indoor rowing and stationary running are examples. An on the other hand, gymnasium exercises and parlor games have been taken outdoors in the summer. I know of a sanitarium where the outdoor gymnasium is more completely equipped and better attended than is the one indoors for winter use. In my home city summer boxing, staged in a baseball park, has become very popular. All this is a result of the natural desire to keep up a good thing. If a fellow's favorite is seasonal he laments the close of that season, and is apt to try extending the pleasurable period in spite of changing weather.

Such is the case with the sport of camping out. Until recent years living out in winter, that is voluntarily, had comparatively few advocates. The nature of their occupation caused some men to do so, but camping as a winter recreation and sport had not been seriously considered.

But hardy vacationists stayed out later and later each year, loath to give up what they had found to be the greatest of all elixirs. September, October, and finally November, were found to be delightful camping months when one was prepared for the cooler weather. Then some courageous spirit came to the front and showed the feasibility of going right through the winter in a tent—and doing it as a sport, and with benefit and pleasure.

It chills the uninitiated, the very thought of it; but we know why; we are too used to hugging the stove. It is significant that those men whose work requires wintering outdoors are especially robust, and even more convincing that the indoor worker improves immeasurably when he quits coddling himself and gets out as much in winter as in summer.

Naturally, winter camping is strenuous, make no mistake about that; it is no sport for invalids. A fellow must be in good condition physically, and must "know how." In camping, as in other things, experience is the best teacher, and the rudiments of living outdoors should have been learned

in the summer. Preliminary walking, porch sleeping, etc., backed up by other health-building measures you have found good, and by some reading on outdoor life and woodcraft, will soon condition any sound person for a winter camp or hike.

I have hinted that habitation, "training into it," is half the battle; the other half is equipment and knowledge of how to use it. Naturally, the first decision has to do with destination, length of stay, and number in the party; the nature and amount of equipment depend largely on these points. Further, much depends on whether the camp is to be a permanent one or a "one night stand." As I cannot cover every condition specifically in this article, my suggestions will have to be rather general.

There are plenty of winter camp resorts where a man can secure a guide and everything needed; cabin colonies, etc.; but to my mind these mean more money and less pleasure than when we rough it on primitive lines.

If you camp permanently near home, whence you can easily get to town for renewals of supplies, etc., your original pack will not have to be large; but if you go far into the wilds for a good stay great care must be taken not to forget important things. And remember this: do not take anything you can dispense with; weight will tell on the trail.

Assuming that you are going to depend on tent shelter, choose a wall tent of good waterproof 10-ounce canvas. Balloon silk is unquestionably the best material for tents, but it comes high, and the canvas, if waterproofed thoroughly, will be satisfactory for your purpose. If going alone (and this is not advisable, as it increases the dangers and decreases the fun), one may do on quite a small tent; but for two persons you should have one of 9 feet by 9½. Two summer campers can do on a 7 by 7, but it must be remembered that in winter we have a stove and a pile of fuel to accommodate. In the summer both the heating and the cooking fire can, and should be, outside the tent, but in cold weather this is not always practicable. For a party of





# Shooting News and Comment



## A HINT ON DOPING

**I** NOTE the inquiry by M. W. in regard to mixing just enough ammonia dope for one gun. I have found that the handiest way to do this is to use a 50 c.c. graduated cylinder, which can be secured from any laboratory supply house. Get a rubber stopper for it.

Put your persulphate and carbonate in the cylinder, add 5 to 6 c.c. of water, stopper and shake until the chemicals are dissolved. Then fill to the desired mark with ammonia 28 per cent, stopper, shake and pour into barrel. With the size stopper I use for the chamber I find 32 c.c. is the right amount of solution to mix. If two guns are occasionally doped add a 100 cc. graduate and stopper to the outfit.

Small dippers can be made to measure the persulphate and carbonate, as absolute exactness is not required. My experience has been that where the solution is made up and used at once the carbonate can be omitted.

A small tin funnel with about 6 inches of rubber tube on the end is handy to place in the breech, the funnel resting on the receiver bridge, to wash the barrel with water after the dope is poured out and to use to run water through the barrel to cool if necessary before doping. No. 00 rubber stoppers are the correct size for the chamber. Rubber stoppers last indefinitely, where corks disintegrate rapidly from the strong ammonia.

Using this method of handling ammonia dope the cleaning is done so easily that it is not worth while to use other and less sure methods.

"BERIC."

## A NIGHT WITH A SICK RIFLE

**J.** A. CHAMBERS of New York City, recently experienced considerable difficulty in cleaning his pet rifle and has appealed to brother shooters to help him diagnose his gun's ailment. Here is his letter:

"We've all heard the time-honored excuse about sitting up with a sick friend, but I believe I may claim originality for the above explanation of being out of sorts last Sunday morning, and some account of the serious illness, and the drastic measures which resulted in complete recovery, may be of interest to some of my fellow enthusiasts in this man's game.

"Let me say to begin with, I acknowledge to being a rifle bug, and if there is one thing about the game I can justly lay claim to, it is the care I give my guns—they get the O. O. and whatever else is needed before I say my 'Now-I-lay-me' every night when I am at home, and are carefully cleaned and greased when I have to leave them for a time, and to head off a rap on the knuckles such as Col. Whelen handed one of our members who had trouble in making his pet tube behave, which ran something like this, 'It is evident

you don't know a — thing about cleaning a rifle,' I may say that I have been a persistent reader of all the Colonel and a lot of other high priests of the order have to say about it, and that I have never before had any serious trouble either with the service load, 150 gr. bullet or reloaded stuff using 12 to 18 gr. No. 80 and 170 gr. M. P. bullets (always until this time with a slight coating of mobilubricant on the bullet only) but having secured a bando of F. A. loaded with 17½ powder and the 170 gr. bullet which I understand has sufficient tin incorporated with the powder to counteract the innate cussedness of the cupro-nickel jacket, I proceeded as is my wont, to the Club range in Upper Montclair to try it out at 200 yds., and after getting the elevation settled, which for my rifle is 2" higher on the Lyman No. 48 than for the service load, I got down to business and surprised myself and in all probability some of my friends, by putting 13 in succession in the black, and to say the least, I wasn't at all cast down, but, as usual, pride goes (or is, ot goeth?) before a fall, and in the offhand on the 'A' target I shot from bad to worse and failed to make the 'skiddo,' which for this range and position is only 41; so I set the gun down to cool and then and not till then, gave it a liberal smear of B. S. A. Safety Paste, and on arrival home at about 11:30, I thought all I had to do was, as usual, to wipe the paste out, swab with hot water and soda, dry, dope with the ammonia solution, wash out again with the soda solution, dry again, then oil with sperm, and make a dive for the hay. But it was not thus by a long shot, for on attempting to wipe out the Safety Paste, it was very difficult to get a small patch through, and impossible to work it up and down. So I proceeded to hot soda swabbing with little or no effect, and on looking through the barrel (Oh, yes, I'd looked through before but my remarks were unfit for such a publication as Arms and The Man), I saw what appeared to be patches of lumpy metal fouling extending from three inches from the muzzle to about half way down the barrel, and, of course, I knew just what to do. Anybody who has consumed the midnight electric light poring over the American Rifleman, back files of Arms and The Man, etc., naturally would know what to do, so I proceeded with the dope in the approved manner, and in the first twenty minutes got only a light tinge of color, and as the obstruction still obstructed, I gave her a second dose which came out with quite a strong color, I made no perceptible dif-

ference either in the appearance of the barrel, or in the difficulty of forcing a patch through. As it was only 1:30, I set her up again for half an hour and this time got very little color and the patient experienced no relief, so looking over my medicine shelf, I came across a bottle of Eley's Nitro-clene and as a last resort, to save the baby's life, I started with this and a stiff wire brush, and then I knew it was sure a case of yellow fever, for this brought on the black vomit, and I continued with a diminishing use of profanity until at last at three a. m. she was as clean as the night I rescued her from the Caldwell swamps, but this isn't enough; I want to know why? and what was it? My own idea which the real sharps may say is all wrong, is that the lead core melted and decided to stay in the barrel. Anyhow, the game is open, anybody can have a guess, and if anybody ever catches me again trying any wonder-working stuff, it won't be in that barrel; I'll borrow somebody else's first, though borrowed guns never shoot straight for me.

"I hope this won't bring me more advice than I can comfortably assimilate, but if it's not putting too great a strain on the editor's well-known good nature, let her go as she lays."

## CONCERNING SHOTGUN LOADS

**H**OW many different kinds of 12-gauge shotgun loads are on the market? Without giving the matter a great deal of thought, the average gunner would probably estimate that there must be at least one hundred combinations. Recently when talking with an official of one of the powder companies he took our breath away by telling us that there were 4,213 different 12-gauge shotgun loads on the market a few years ago, but that his company had been conducting experiments at enormous expense in an effort to reduce the number and find which loads are best suited for different species of game.

This gentleman told us that at the present time they are convinced that 638 different 12-gauge loads are all that are necessary to cover all forms of shooting. It seems impossible that any ammunition concern could list in its catalogue 4,213 different loads in a 12-gauge case. If this number seems extreme, as it did to the writer, do a little figuring yourself.

Take the sizes of shot from 1 to 12 and figure the different combinations from ¼ of an ounce to the maximum of 1½ ounces. Then take the powder load into consideration. Figure from a minimum of 2 drams up to the maximum of 3½ drams. Double this figure to provide for both soft and chilled shot. Again double it to allow for both high and low brass shells.

There are eleven different shotgun powders in general use in America today. Multiply the number you now have by eleven and you will find there are over 20,000 possible combinations. Of course, many of these are so freakish that they are perhaps never loaded. However, it is easy to be seen that if powder and shot loads were split into eighths and sixteenths, as many of the old shooters used to do when the loaded their shells by hand, the total of 4,213 would be greatly increased.

The powder companies have shot thousands and thousands of different loads until they



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can give you the breach pressure and muzzle velocity of every possible combination and the striking power of the shot at intervals of one yard until the pellets are traveling so slow that they will not register. In this way, they have proved without question which loads should give the best results on different species of game.

By carefully studying the table they have prepared, most shooters are apt to receive a severe shock when they realize that they would have had much greater success in field shooting if they had discarded their favorite duck load long ago. For years the writer has shot 3 1/4 drams of bulk smokeless with 1 1/4 ounces of 7 1/2 chilled shot. We were greatly surprised to learn that if we had dropped an eighth of an ounce of shot, the pattern would have been better and the penetration greater.

The 3 1/2-1 1/4 load which so many duck shooters swear by does not prove out in practice. It has been learned from the experiments that 3 1/4-1 1/8 or 3-1 will produce better results. It will be hard to convince many of the old wild-fowl shooters that they could have any degree of success with 3 drams of powder and 1 ounce of shot. Nevertheless, scientific experiments have proved that the pellet energy at 30, 40, 50 and 60 yards with this load is greater than the famous duck shooting load of 3 1/2 drams of powder and 1 1/4 ounces of shot.

**TO EXTERMINATE RABBITS**

IN AUSTRALIA rabbits are a pest and a menace to agriculture," says the American Game Protective Association. Thousands of dollars have been spent in an effort to kill them down to a point where they will do no damage. Mr. William Rodier, of Melbourne, Australia, claims to have cleared 64,000 acres by a plan all his own, after poisoning and other methods had

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proved failures. Mr. Rodier trapped the rabbits alive, killed the females and released the males.

Every breeder of horses, dogs, sheep and poultry knows that an excess of males means failure, and he therefore regulates his stock accordingly. If this is true with domestic animals, why should it not work out the same way in the wild state?

In commenting upon this the New York Tribune cites the case of the bird of paradise. The male, never very numerous, has been hunted for his brighter plumage for two thousand years. As a result, the race became polygamous and survives. In comparison, the passenger pigeon, counted by the thousands of millions only a hundred years ago, was hunted at nesting time, when the female sat twenty hours a day. The females were killed in disproportionate numbers and the species is now extinct.

Five-year closed seasons on quail have never brought the results desired, mainly perhaps for the very reason that in a short

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time the males exceed the females in number and breeding operations are disturbed. In most cases there are more male birds in a covey than females, but due to their brighter coloration they are the first to fall to the gun and shooting in moderation keeps the species at an even balance.

The ring-necked pheasant is without question the salvation of the sportsman in sections where native game birds cannot survive. The fact that the plumage of the male bird is so entirely different from the female as to permit an open season on cock birds only, insures success. The records obtained from the New York State law requiring gunners to report game killed shows that the native birds are producing well each year. Under the New York law only cock birds are shot. The species is polygamous and it has been proved that a single male bird will cover an unusually large territory.

**CALIFORNIA SHOTS MEET**

THE California Civilian Rifle Team held a meeting at Camp Perry after the finish of the National Individual Match on the afternoon of September 16th, with Adjutant General J. J. Borree presiding, the



subject being the California State Rifle Association.

Mr. H. E. Sargent, of Pasadena, was elected president and Captain C. W. Linder, of the Olympic Club, of San Francisco, vice-president. It was moved that the president appoint a secretary and a treasurer. Also that a committee be appointed to draw up a constitution and by-laws, and to outline a policy for the coming year.

The principal aim of this organization is to bring into closer co-operation the various clubs throughout the State. It is hoped that the association may stir the enthusiasm of the clubs, that they in turn shall attract new blood and, through competition, to bring closer those who now take such a deep interest in the sport.

**PISTOL TARGET DISCUSSED**

THE aiming bull on the 50-yard standard American pistol target is called up for discussion by Capt. H. L. Harker of Baltimore, who had charge of the pistol ranges at Camp Perry. Captain Harker says:

The National Pistol Matches of 1921 were in every particular a complete success. With arms and ammunition as perfect as modern science can make them, the winning of matches then becomes a test of human endurance, since the possible is no longer the goal but the plus bull's-eye running until failing light and finally darkness compels the tenacious competitor to run out for a close four. This more closely depicts the rifle game, but since I started out to tell something of the pistol with which I am more closely allied, I must lend attention to the short arm.

I feel perfectly safe in saying that there was present at these matches the best pistol and revolver shots in the world. Now, this is a pretty broad statement, but if you knowing ones will look through these columns you will bear me out. Of course whenever a National is held the fellow who can only shoot a little bit is always there and this one was no exception to the rule; I also want to impress upon you that this is the fellow we want, because in him we hope to develop the expert shot, who can in turn teach others. We must of necessity have the top notchers, otherwise the "Doubting Thomases" (not Herman or Gunnery Sergeant) could not be convinced of the possibilities of the hand gun; then again these experts will help convince the beginner that this "movie stuff" "can't be did."

The men who attended these matches were as a whole the best and most attentive lot that it has been my pleasure to instruct, and I felt amply repaid for my work by the absence of any trouble, confusion or misunderstanding during the National Pistol Match, although I had sixty targets operating.

For the instruction work this year, there was arranged near the club house at the beach, although sufficiently far back to be out of the sand, forty temporary targets with a table-like firing point constructed 25 yards distant; this was one of the kind of ranges where the shooter does his own pasting and is the most satisfactory for the beginner. After the matches started this range was kept open for practice. You will say that there was some practicing done when I tell you that twelve to fifteen thousands rounds were used per day after the boys got going good.

Now, as you have persevered with the foregoing and have possibly expressed some opinion to yourself (mild or otherwise) I am going to give you something to think about, but please address your expressions to ARMS AND THE MAN as I must start prac-

**SCHEDULE**

**N. R. A. Gallery Rifle and Pistol Matches, 1921-1922**

Period	Event	No.	Range	Type	Ent. Fee	Entries Close
Dec. 3-Dec. 24	Prone Team Match	1 (R)	75 ft.	8 man	\$5	Nov. 20
Dec. 3-Dec. 24	Prone Team Match	5 (R)	50 ft.	8 man	5	Nov. 20
Dec. 3-Dec. 24	Kneeling Team Match	2 (R)	75 ft.	8 man	5	Nov. 20
Dec. 3-Dec. 24	Kneeling Team Match	6 (R)	50 ft.	8 man	5	Nov. 20
Dec. 3-Dec. 24	Sitting Team Match	3 (R)	75 ft.	8 man	5	Nov. 20
Dec. 3-Dec. 24	Sitting Team Match	7 (R)	50 ft.	8 man	5	Nov. 20
Dec. 3-Dec. 24	Standing Team Match	4 (R)	75 ft.	8 man	5	Nov. 20
Dec. 3-Dec. 24	Standing Team Match	8 (R)	50 ft.	8 man	5	Nov. 20
Jan. 14-Feb. 11	Slow Fire Pistol Match	1 (P)	20 yds.	Indiv.	1	Jan. 2
Jan. 14-Feb. 11	Rapid Fire Pistol Match	2 (P)	20 yds.	Indiv.	1	Jan. 2
Jan. 14-Feb. 11	Pistol Championship	3 (P)	20 yds.	Indiv.	1	Jan. 2
Jan. 21-Feb. 4	75-Foot Individual Championship	17 (R)	75 yds.	Indiv.	1	Jan. 10
Jan. 21-Feb. 4	50-Foot Individual Championship	18 (R)	50 yds.	Indiv.	1	Jan. 10
Feb. 15-Mar. 25	Civilian Interclub Team Championship	9 (R)	75 yds.	5 man	10	Feb. 5
Feb. 15-Mar. 25	Civilian Interclub Team Championship	13 (R)	50 yds.	5 man	10	Feb. 5
Feb. 15-Mar. 25	Military Unit Team Championship	10 (R)	75 yds.	5 man	10	Feb. 5
Feb. 15-Mar. 25	Military Unit Team Championship	15 (R)	50 yds.	5 man	10	Feb. 5
Feb. 15-Mar. 25	Military and High School Team Champ.	11 (R)	75 yds.	5 man	10	Feb. 5
Feb. 15-Mar. 25	Military and High School Team Champ.	16 (R)	50 yds.	5 man	10	Feb. 5
Feb. 15-Mar. 25	Intercollegiate Interclub Team Champ.	14 (R)	50 yds.	5 man	10	Feb. 5
Mar. 4-Apr. 1	Pistol Team Match	4 (P)	20 yds.	5 man	5	Feb. 20
Apr. 2-Apr. 8	Standing Position Match	19 (R)	50 ft.	Indiv.	1	Mar. 28
Apr. 2-Apr. 8	Standing Position Match	23 (R)	75 ft.	Indiv.	1	Mar. 28
Apr. 2-Apr. 29	50-Foot Grand Aggregate	27 (R)	50 ft.	Indiv.	..	..
Apr. 2-Apr. 29	75-Foot Grand Aggregate	28 (R)	75 ft.	Indiv.	..	..
Apr. 9-Apr. 15	Sitting Position Match	20 (R)	50 ft.	Indiv.	1	Apr. 4
Apr. 9-Apr. 15	Sitting Position Match	24 (R)	75 ft.	Indiv.	1	Apr. 4
Apr. 16-Apr. 22	Kneeling Position Match	21 (R)	50 ft.	Indiv.	1	Apr. 11
Apr. 16-Apr. 22	Kneeling Position Match	25 (R)	75 ft.	Indiv.	1	Apr. 11
Apr. 23-Apr. 29	Prone Position Match	22 (R)	50 ft.	Indiv.	1	Apr. 18
Apr. 23-Apr. 29	Prone Position Match	26 (R)	75 ft.	Indiv.	1	Apr. 18
May 1-May 6	The Astor Cup Team Match	12 (R)	50 ft.	10 man	5	Apr. 25

ticing up for fear my friends will be disappointed when the next match comes off.

You no doubt recall that in 1918, 1919 and 1920 we had 50-yard stages, slow fire in the National, firing on the Government "L" target with its 5-inch sighting bull. This little black speck away off at 50 yards looked like a ship on the horizon. Although the other counting rings were very generous in size, it was next to impossible to make a high score, owing to the very small aiming point. I think there were only nine persons making ninety or better in the 1920 National.

Naturally a big howl went up for a modified aiming point, my contention being a larger black center if the 50-yard distance was to be maintained. Had there been the least idea in my mind that your uncle would have adopted the 50-yard Standard American target I would surely have advocated it and held it at the 50-yard mark; we would then have had some comparison with previous shooting on similar target.

The idea of the large bull, however, seemed to have taken root, and in some way, not known to me the large bull was adopted and placed at 25 yards, this had the effect of double crossing the game or overdoing it, so to speak.

I think the Standard American Target much preferable to the "L" target as there is not the danger of ties. I am also frank in saying the aiming bull is too large for 25-yard shooting. I would suggest allowing the eight (8) ring to remain white, this would give you an aiming bull of 5½ inches in diameter and one that would demand better concentration. Some will say, file your front sight down so you can hold six o'clock. Now, who wants to mutilate a gun by filing, thereby ruining it for shooting at anything else; then again you have too much variation in windage and it don't take long to wander out of the ten ring. I tried several specimen targets, as advocated, by cutting out an eight ring, reversing it and pasting it over the regular target, black to back; this left only the 10 and 9 ring black; I had several of our best shots try this

target, and while all spoke favorably of it, their shots went high and didn't count as much as on the large bull, for the reason that they had filed their sights to suit the large target.

My recommendation of the smaller bull is for the expert shot and not for the beginner; when it comes to the novice give me the large bull and I will get him interested by giving him something he can hit. When he begins to think he can hit something, it's time enough to give him something smaller. I promised to start the ball rolling, so here it is, push it along.

H. L. HARKER.

**NEW PISTOL CASE DESIGNED**

OWING to many insistent inquiries of a more substantial and more elaborate Fire Arm receptacle, to contain the arm when not in use in the home or in the office, the Colt's Patent Fire Arms Manufacturing Company, of Hartford, Connecticut, have arranged for the production, after a special design, of what they term the Colt Special Case, which they offer when ordered in connection with a Colt Arm.

The Special Cases are now made for the Calibres .25, .32 and .380 Automatic Pistols and are constructed over a wood frame, covered with heavy pulp-board and finished in high grade black leatherette, with nickeled clasp. The cases are lined with either blue or maroon velveteen and sateen, as preferred, and recessed to receive the arm in such a way that it is easily grasped when necessity demands.

Arrangements for the shipment of the arm ordered and the Special Case have been concluded through the medium of an especially designed container, with a compartment for the arm with its cleaning brush and descriptive literature in the base and compartment for the Special Case above. In this way the case reaches the dealer and customer in the best possible condition and without any possible signs of wear such as would be in evidence if the arm were shipped in its case.



## WINTER CAMPING

(Continued from page 14)

the ends of the long ones, nailing them in place; then on either side place a two-inch rail (to hold bedding in place), and nail these also. The bunk is now complete and ready for the "feathers."

"The browse or other softening may now be put into the bunk—which has previously been covered with an old blanket, strips of burlap or other available material, to prevent the browse from sifting through the poles—and topped off with the blankets. Or even better is a tick or sack of a size to cover the bunk, which may be filled with browse. But in either case, if care has been exercised in selecting only very small, lively poles for springs, a cozy, comfortable and exceedingly warm bed is the result."

If the camper could have just what he wanted in the way of bedding, I would say take the rabbitskin blanket made by the northern Indians. It is heavy, weighing some ten pounds, that's its main fault; but it surely is warm!—warmer than a whole load of woolen blankets. Ordinarily, good woolen blankets will serve your purpose; the winter camp is no place for the common comforters nor for cotton blankets. The Eiderdown quilt is warm, but it can't stand rough usage. It is well to remember that two comparatively light blankets are warmer than one heavy one. Don't neglect to air the bedding every bright day.

The old-timer at camping can always be distinguished by his wisdom in the choice of cooking utensils—or perhaps I should say their rejection, since it is mostly a matter of elimination. If a prospective camper attempts to take every pan, pot and kettle that he could or might use, his outfit will be bulky beyond all reason. Even the put-up outfits are somewhat more complete than necessary for an experienced camper. They will cost you more too than pick-ups. Take just what you are going to need; you'll be surprised at your own resourcefulness when it comes to necessity, and this is a part of the fun and the woods' education.

Make 'em nest; that should be your motto in assembling the cooking tools. It is mostly a matter of frying pans, kettles, cups, pails and pans, so fit them together to make the smallest possible bundle; and carry them in a clean cotton bag. Of course, you must take a knife, fork and spoon for each person.

In putting up the food supplies bear in mind that this is a cold weather outing. One's appetite not only calls for more food in winter, but for different food from the summer diet. The vigorous exercise of tramping and the abundant oxygen of the keen cold air will put you in shape eagerly to devour some things from which at home you would turn in dislike. If you are out

for long you will crave fats, and this bodily call is not to be ignored; but remember that there are other fats than meat; you would be ill advised to depend on flesh foods exclusively.

What can you get in the section you have chosen? If there is game, or other sources of supplies available to you, figure this in and reduce your pack accordingly. Try to do without the bulky, heavy foods, using something in their place. Potatoes, onions, apples, etc., are better left behind. If you do take potatoes and they freeze, be sure to use them before they thaw. I can mention the following fundamentals as a reminder, though everything depends on individual taste and the number in the party: Flour, cornmeal, baking powder, bacon, lard, salt, pepper, butter, beans, peas, evaporated fruit, sugar, syrup, and perhaps a few pickles. A little stock of condensed milk will be very agreeable, though it usually freezes and bursts the cans.

A good camp axe and a stone with which to keep it in condition, is an indispensable; and a hammer with an assorted lot of nails will be needed if you fix up your camp for comfort. You must have a lantern, or preferably a camp lamp if you count on reading in the evening. Rope should not be forgotten, and a bit of wire comes handy at times.

Of course there must be at least one gun in the party, for safety as well as for sport. Winter fishing (through the ice) is great fun, and you might do well to carry some tackle, if your state laws permit the taking of fish in winter. A compass is a prime requisite, and so is a simple first aid kit, which most any druggist can put up on request. Try not to forget any of these apparently little things; if you are going far into the wilderness review your outfit repeatedly, adding here, eliminating there, etc., until you have it as perfect as you can get it.

Equally important with the outfit is the camper's clothing. No use to select heat-building food, then neglect the leak of insufficient or improper clothing through which the heat will escape. Use wool—cotton is not apt to be satisfactory for the winter camper's use. If going into really cold latitudes, wear two or three pairs socks and two suits of underwear. The dead air between two garments is, of course, a poor conductor of heat, and warm for that reason. It is always desirable when the winter camper can manage it. Wear a woolen shirt, and mackinaw coat and trousers. Needless to say, you must provide for a change of clothing.

For the head use something that will answer for a "night cap." A sleeping helmet is fine for night and day; so is the knitted woolen toque. In the absence of something better, tie a silk handkerchief

across your face as a protection against a freezing wind.

The footwear is vitally important. There are numerous styles of sporting boots, but all considered, the slipper moccasins worn by the Indians are best for winter hiking. Wear them over two pairs of woolen socks, with light cotton hosiery next to the feet. Begin easily, as your feet may be sore for a few days. If you use snowshoes—and you will have to if you go into the deep snows—select the Chippewa moccasin; its cloth top assists in fastening the snowshoe strings. It is best always to have an extra outfit of footwear.

Transportation of your outfit to the camping ground depends on several things: nature of the route, distance, size of the pack, expense, etc. If there are a number in the party the pack can be so divided that each man has just a nice load; this is the simplest, cheapest method, but conditions may make it impracticable. Train, automobile, wagon, pack-horses, dog sleds, canoes—select whatever means is best in your case; the main thing is to get there.

The summer camper in selecting a site for the tent has to think of elevation, drainage, firewood and water. In winter camping there is one point even more important than any of these, as failure to consider it may mean disaster the very first day. I refer to nearby trees; many a camp has been devastated by a falling tree, and the danger of life, especially at night when the camper is sleeping, is great indeed. Even if one could be sure no tree would fall, the roar of a storm in the tree-tops is not always conducive to sound slumber. Even on quiet days dead trees sometimes collapse without the slightest warning, so the better plan is not to locate within reach of any large trees. A windbreak of small trees on your north is fine, if such can be utilized without pitching the tent in a sink. Even in winter some elevation is desirable; an unexpected thaw of the surrounding snow would make a low spot untenable. Face your tent to the south, and be particularly careful to stake down the side walls snugly. It is best to box them at the bottom with boards or small logs.

In setting up the stove do not let it be closer than eighteen or twenty inches to the canvas at any point. Elevating the stove will make it (most of them) easier to work on. Run the pipe through the side wall instead of the roof; the latter plan leaves a bad leak-hole in your tent top. Be sure to protect the canvas at the pipe-hole with asbestos or tin. Now get busy with the axe before it's too dark and lay in some firewood, and construct a bed, as above described; then get supper. Barring accidents, you are billed for one of the finest times of your life.





## Loads And Re-loads

*In this column, conducted by Major Townsend Whelen, will be answered inquiries pertaining to target and hunting small arms, hunting licenses, game guides, and kindred subjects. An effort will be made to reply to inquiries direct by mail before the appearance in this column of the answer. The service is free to all, whether the inquirer is a subscriber to Arms and the Man or not. All questions are answered at length by mail. Those portions of general interest are published here. Every care is used in collecting the data for these answers but no responsibility is assumed for any accident which may occur.*

RECENTLY I purchased 1,000 30-06 cases and 1,000 Model 1906 primers from the Government. The primers are marked Winchester No. 33 N. F. Now, I would like to know if these primers are non-mercuric. I have just purchased new Springfield and would not like to use anything but non-mercuric primers. Also notice on the cases the letter R, following the year 21. What does this letter R stand for?  
R. O. J., Central City, Iowa.

Answer: The 1,000 Model 1906 primers, which you recently received from the Government, and which are marked "Winchester," are non-fulminate, that is, "non-mercuric," and are exactly the same as the primers now being used in all Government ammunition, having simply been manufactured by the Winchester Repeating Arms Co., on contract.

The letter R on the head of the cartridge case signifies that the cases are made with such anneal that they will do their best work in rifles, and such cases should not be used in machine guns. Cases for use in machine guns require soft body anneal so that they will not rupture or separate, but such cases give very hard extraction in rifles.

I HAVE a Krag carbine and also a Springfield (1903); which is the better gun for deer hunting in Maine and what kind of ammunition should I use?

The bands on my Springfield have worn bright; is there any way I could darken them to match the barrel which is parkerized?

F. F., New Bedford, Mass.

Answer: Either the Krag carbine or the Springfield should be satisfactory for deer hunting in Maine. I would rather prefer the Krag, it being shorter and handier in thick timber. For the Krag, use any ammunition loaded with 220-grain soft nose bullet. For the Springfield, use any Cal. .30 Model 1906 ammunition loaded with pointed expanding bullets either 150 or 180-grains weight.

To reblue the bands on your Springfield, which have become worn bright, dip them in kerosene oil and then immediately start heating them over a gas burner, burning the oil off. After the oil is burned off, and while you are continuing the heating, about every 30 seconds wipe the band off outside with a rag wet with kerosene. This is to wipe off the scale, and to keep the band from becoming spotted. The color as the heat progresses will first turn straw color, then purple, and finally blue. When it becomes the dark blue color desired, plunge the band into a vessel containing kerosene. This will give you a good bluing on the band. Perhaps it would be better to prac-

tice this once or twice on a plain piece of steel before starting in on the bands. All the old bluing should be removed first with fine emery, and then polish with crocus cloth.

I HAVE secured from a friend a bandolier of old .30-calibre cartridges for Model 1903 rifle. The heads of the shells indicate that they were made in 1904 and 1905. The velocity as stamped on the bandolier is 2,259 feet at 53 feet from the muzzle. Can you tell me if these are loaded with the old nitroglycerine powders, and would you recommend their use in a new Springfield in good condition, chambered for 1906 ammunition?

O. F. G., Dixon, Ill.

Answer: The Cal. .30 Model 1903 cartridges which you mention cannot be used in the Model 1903 rifle, as the Model 1903 rifle was in 1906 altered to take the Model 1906 ammunition. The cartridge case of the Model 1906 ammunition is a little shorter in the neck than the cartridge case for the Model 1903 ammunition, so that the Model 1903 cartridges will not fit, nor can they be inserted in the chamber of the present Model 1903 rifle. Those Model 1903 cartridges were probably loaded with what is known as NGS-2 powder, which is a nitroglycerin powder and rather erosive. When it was used the accuracy life of a barrel was only about 800 rounds.

CONSIDERABLE trouble is being experienced in the Oakland Rifle Club with the splitting of cases, Model 1906, when reloaded with primers purchased from your arsenal last year and marked Winchester No. 33. Cases are of Frankford manufacture and are resized full length after each shot. This trouble was not experienced when formerly using the Frankford H-48 primer, which has led to the conclusion on my part that Winchester No. 33 is not a strictly non-mercuric primer.

Is this correct or is the splitting due more to the resizing of the cases? Cases split both in neck and body.

Is the new Frankford primer strictly non-mercuric?

Could a slight coating of grease, Mobilubricant-Acheson graphite, accumulating in the chamber, be in any way responsible for this splitting of cases?

W. H. R., Berkeley, Calif.

Answer: The primers marked "Winchester No. 33" are exactly the same as our Frankford Arsenal No. 70 primer, simply having been made for us by the Winchester Company under contract. This is a strictly non-mercuric primer, and a thoroughly reliable one. It does not contain any fulminate of mercury, and it cannot pos-

sibly be responsible for the splitting of the cases which you mention. Also, I do not believe that a slight coating of grease accumulating in the chamber could in any way be responsible for the splitting or the cases. This might, however, cause slight indentations in the cases.

The splitting of the cases is probably due to poor cartridge brass, and to nothing else. During the War we were obliged to take brass where we could get it, and even today the manufacture of brass is not yet stabilized to the extent that we can get the fine cartridge brass which we obtained prior to 1914. I think you have simply got hold of a rather poor lot of cases and if you change to another lot I believe you will find that even with a good deal of the poor brass the cases can be reloaded 10 to 12 times without splitting.

HAVE you ever used gasoline to clean .22 calibre rifles using the long rifle cartridge, instead of the usual cleaning preparations that are on the market? If so, I would be glad to have the result of your experience.

J. G. L., Wilmington, Del.

Answer: Gasoline should make a fair cleaner for this purpose, but it is liable to cause rust and should be wiped thoroughly out of the barrel after using it and then the barrel well oiled. It is, however, not nearly as good a cleaner for the purpose as just plain water.

When a .22 calibre rifle, using either Lesmok or smokeless powder is fired, you have in the barrel the fouling of the primer and the powder. The primer fouling is potassium chloride, which is a salt, which absorbs water almost at once from the air and then, of course, starts rust very quickly. Potassium chloride is not soluble in water or any aqueous solution such as stronger ammonia. The powder residue is apt to be acid also, which helps rust along. It is better, therefore, to use a strong alkaline solution in cleaning. Therefore, probably the best way of cleaning a .22 calibre rifle is, first, to push one dry patch through and out of the muzzle to remove the bulk of the black fouling, then to follow by swabbing the bore with several patches wet with stronger ammonia or Winchester crystal cleanser, which is practically the same thing. Follow with four or five more patches to thoroughly dry and clean the bore and finally scrub well with one containing heavy oil or gun grease. It is never safe to put a .22 calibre rifle away after one cleaning. It should be always cleaned again a day or two after it was fired. If cleaned thus with ammonia, you will then be perfectly safe in putting it away.

Gasoline is all right as an emergency cleaner, but unless you clean repeatedly after its use and not leave any trace of it in the bore, I think that sooner or later you will find that you may come to grief.

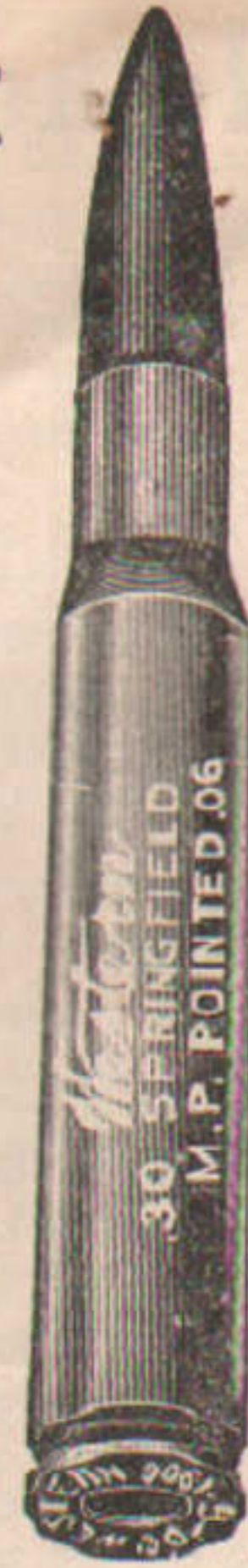
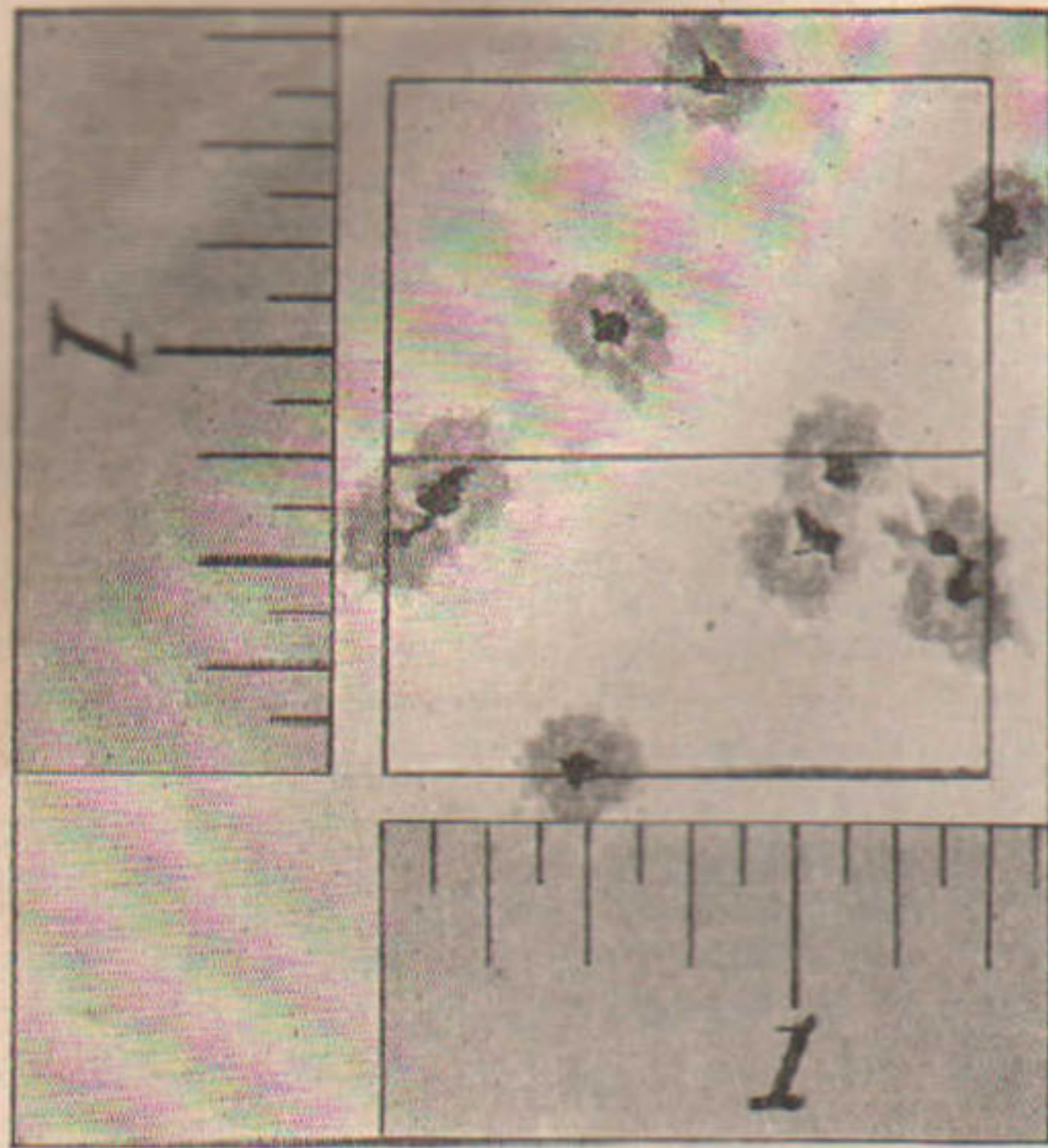
I AM looking for a reduced load to use in my .256 Newton that would approximate the 25-20 cartridges. I should like to cast my own bullets.

What powder charge should I use and what metal in the casting of the bullet? Would lead with stick solder added give a hard enough alloy or would pure lead answer?

I have your book, The American Rifle, and from your descriptions of No. 75 and No. 80 powders I feel that these are the powders to use, especially the latter. Would 7.5 grams DuPont Sporting Rifle Powder No. 80 and plain lead bullet be a satisfactory and



# It's Some Bullet



## The *Western* "Boat Tail"

The figures below are in reference to the above facsimile of a target made with this new bullet. Range 200 meters, 30 '06 Springfield rifle, 180-grain "Boat Tail" bullet, Lubaloy jacket. Extreme vertical 1.63 in. Extreme horizontal 1.47 in. Mean vertical deviation 0.35 in. Mean error 0.99 in. Mean radius 0.63 in.

Western Cartridge Company, East Alton, Ill.

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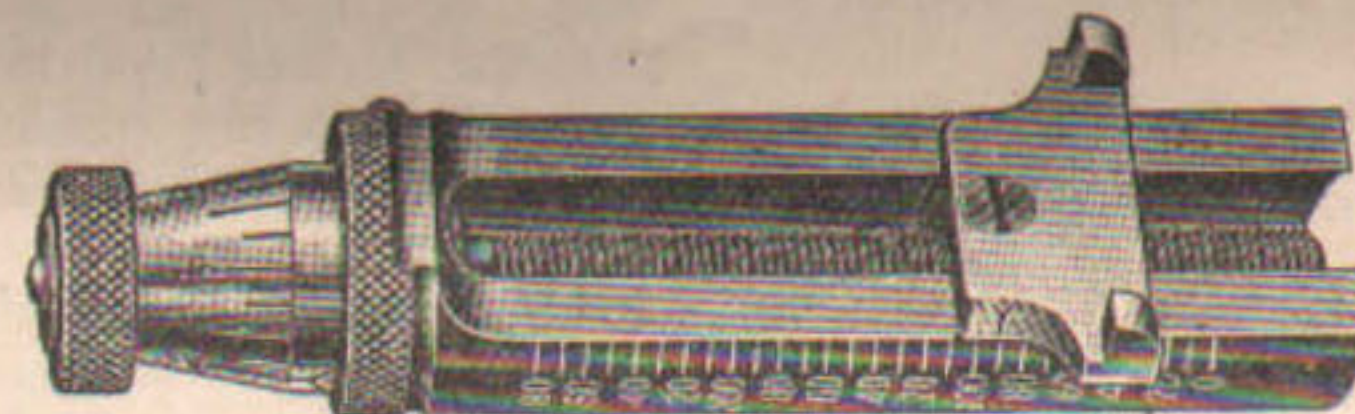
SIGMUND EISNER COMPANY  
NEW YORK CITY

safe load in your estimation? I get this idea from the table on page 337.

T. R. V., N. Y. City.

Answer: I have received your letter of September 21st, relative to a reduced load for the .256 Newton rifle. The groove diameter of the barrel is .268 inch. Therefore, the bullet, after it is sized and lubricated, should measure about .269 to .270 to give the best results. The bullet had better be about 130 to 140 grains in weight, and the powder charge about 12 grains of DuPont No. 75 or No. 80 powder. With less than 12 grains you run into trouble from poor ignition when the powder charge is up towards the front of the powder chamber in the case and not back near the primer. The composition of the bullet should be about 10 parts of lead to 1 part of tin, by weight, or you can substitute solder, remembering that solder is fifty per cent tin and fifty per cent lead. An alloy containing antimony could also be used, but this adds to difficulties in making the alloy, and tin is just as good.

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I do not know where you can get a mould for such a bullet cheaply. The Ideal Manufacturing Company may make a suitable mould if you can get one from them. The Modern Bond Company, of Wilmington, Del., can make you a mould, but I do not know what the charge would be.

CAN the Krag shell be loaded with pointed bullets sufficiently far out of the shell to insure the bullet coming in perfect contact with the lands of rifling and yet be worked through the magazine of the Krag

rifle? What bullets and loads for same would you suggest as giving good accuracy and power? I would like to use the 150-grain point bullet and a heavier if possible.

Do you consider the Springfield sufficiently strong and otherwise suitable for remodeling to shoot the .30 Newton cartridge, and would the advantage gained in power and range with the short Springfield barrel justify the expenditure necessary?

What is the regular trade designation of the powder which the Government lists as "smokeless powder for Cal. .38 revolver and Cal. .45 pistol and guard cartridges"?



# B.S.A.

## An Incident

### At Camp Perry September, 1921

- B. S. A. Match Rifle ..... \$48.00
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Mr. R. Wiles, of Chicago, Ill., shooting indifferently with a — Rifle, decided to obtain real results. He therefore purchased a

**B. S. A. No. 12 MATCH RIFLE**  
and shot his way into the  
**INTERNATIONAL TEAMS**

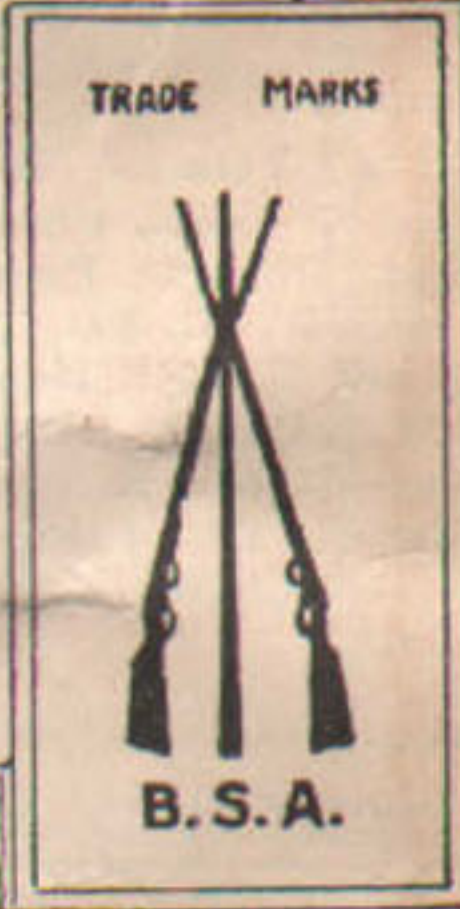
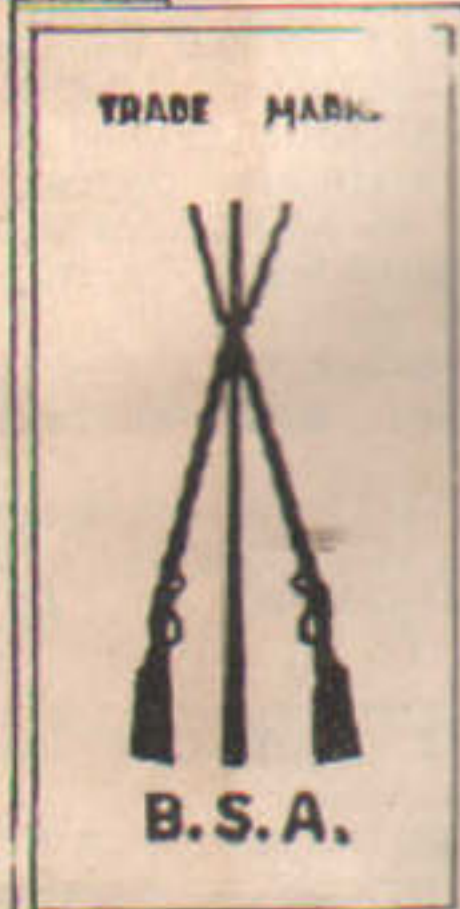
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**SHOOT A B. S. A., AND WIN**

Send for detailed descriptive matter.

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What, in your opinion, would be the most suitable rifle and sighting equipment procurable, of either commercial or private manufacture, for entering small-bore competition? If you suggest a hand-made barrel please name your choice of maker and his address.

What action would be suitable to which to attach the Neidner Cal. .22 H. P. target barrel which you mentioned in a recent copy of ARMS AND THE MAN, as coming on the market soon?

Is the M. 1903 rifle which is listed in the War Department memorandum to rifle clubs as "star gauged and especially selected for the National Match," manufactured with the same care as regards finish and accuracy as those described by Kendrick Scofield in July 15th ARMS AND THE MAN, to be furnished this year at Camp Perry?

Who can make and fit the Mann taper dove-tail mountings for the Winchester A5 scope?

What is the best powder scales at present procurable and what is the price?

What is the difference, if any, in the mechanism of the 1896 Krag carbine and the 1899 carbine?

Please pardon the very long list of questions, but I will try not to bother you often.

R. R. R., Prescott, Ariz.

Answer: The Krag cartridge, when loaded with pointed bullets sufficiently far out of the case to insure the bullet coming in perfect contact with the lands, cannot work through the magazine of the Krag rifle. Such cartridges give the very best accuracy, but pointed bullets seated in the Krag with such an overall length that they will work through the magazine, give pretty fair re-

sults, and I would advise having them so seated except for long range match shooting.

I would not advise having the Springfield remodeled to shoot the Cal. .30 Newton cartridge. The cutting away of the bolt head, necessary to handle the large head of this case, weakens the bolt and the case is not well supported, and the change will be accompanied by a little danger, particularly in these days when our cartridge brass is not all that it should be.

The smokeless powder which we are now listing as "smokeless powder for Cal. .38 revolver and Cal. .45 pistol and guard cartridges" is similar to DuPont pistol powder No. 5.

I think that the most suitable equipment for small bore competition work is either the Winchester No. 52 rifle, or the B. S. A. No. 22 match rifle, using whichever fits you the best. The regulation rear sight should be used with each of these rifles, and the front sight can either be the front sight as issued on the rifle, or in the case of the Winchester rifle if you prefer an aperture sight, then have the Winchester equipped with the regular Winchester aperture front sight. It is a matter of individual choice and eyesight whether a man prefers a straight post front sight or an aperture sight. After watching all the scores and competitions, and actually shooting on the American Team which competed for the Dewar Trophy this year, I have come to the conclusion that none of the special barrel makers are making calibre .22 barrels which are any better than those now being put out by the Winchester and B. S. A. people.

I should say that the best action for the Neidner calibre .22 high power barrel would be a Winchester single shot, a Springfield, or a Mauser.

The Model 1903 rifle, star gauged and especially selected for the National Matches, is identical with the rifle described by Mr. Scofield in the July 15th edition of ARMS AND THE MAN.

Mann taper dove-tailed mounts and bases for the Winchester A5 telescope sight are furnished by the Neidner Rifle Corporation, 612 Spruce Street, Dowagiac, Michigan. They are in a position to make them now, but they have to be made to order.

The best powder scales that I know of at present are the Fairbanks Miners' Assay Scales. I do not know the price of them at present, but the pre-war price was \$10.00.

There are slight differences in the mechanism of the Model 1896 and 1899 Krag carbine, particularly in the receiver. Some few of the parts are slightly different, but as far as efficiency is concerned they are practically equal.

**W**ILL steel wool of the finest grade hurt a rifle barrel (used with oil)? I tried it once, and it sure will polish up the corrosion, which appears in a Krag or Springfield barrel a couple of days after using in a hurry.  
C. R. M., Brodhead, Wis.

Relative to the use of steel wool for cleaning the rifle barrel, I would use this wool only in an emergency, when the barrel has become slightly rusted, or has bad corrosion which you cannot get out in any other way. It should be used on a swab, and you should be very careful to have the swab turn with the rifling and not brush across the lands. A little use will probably not hurt your barrel to any appreciable extent, but continuous use is bound sooner or later to wear off the sharp corners of the lands.



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Camp McClellan Rifle Club, Camp McClellan, Anniston, Alabama; Secy., I. B. Thawley, Camp McClellan, Anniston, Alabama; Pres., H. R. McMillan; Vice-Pres., J. L. Pope; Treas., F. J. McGinness; Exec. Officer, Spencer Sox. 20 members.

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City of Washington, ) ss:  
District of Columbia.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fred H. Phillips, Jr., who, having been duly sworn according to law, deposes and says that he is the Editor of the ARMS AND THE MAN, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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Name of publisher, National Rifle Association of America; post-office address, Washington, D. C. Editor, Brig. Gen. F. H. Phillips, Jr., 1108 Woodward Bldg., Washington, D. C.

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2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.) No stock issue.

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FRED H. PHILLIPS, JR., Editor.

Sworn to and subscribed before me this first day of October, 1921.

(Seal)

SADIE E. ROBERTS.

(My commission expires March 27, 1925.)  
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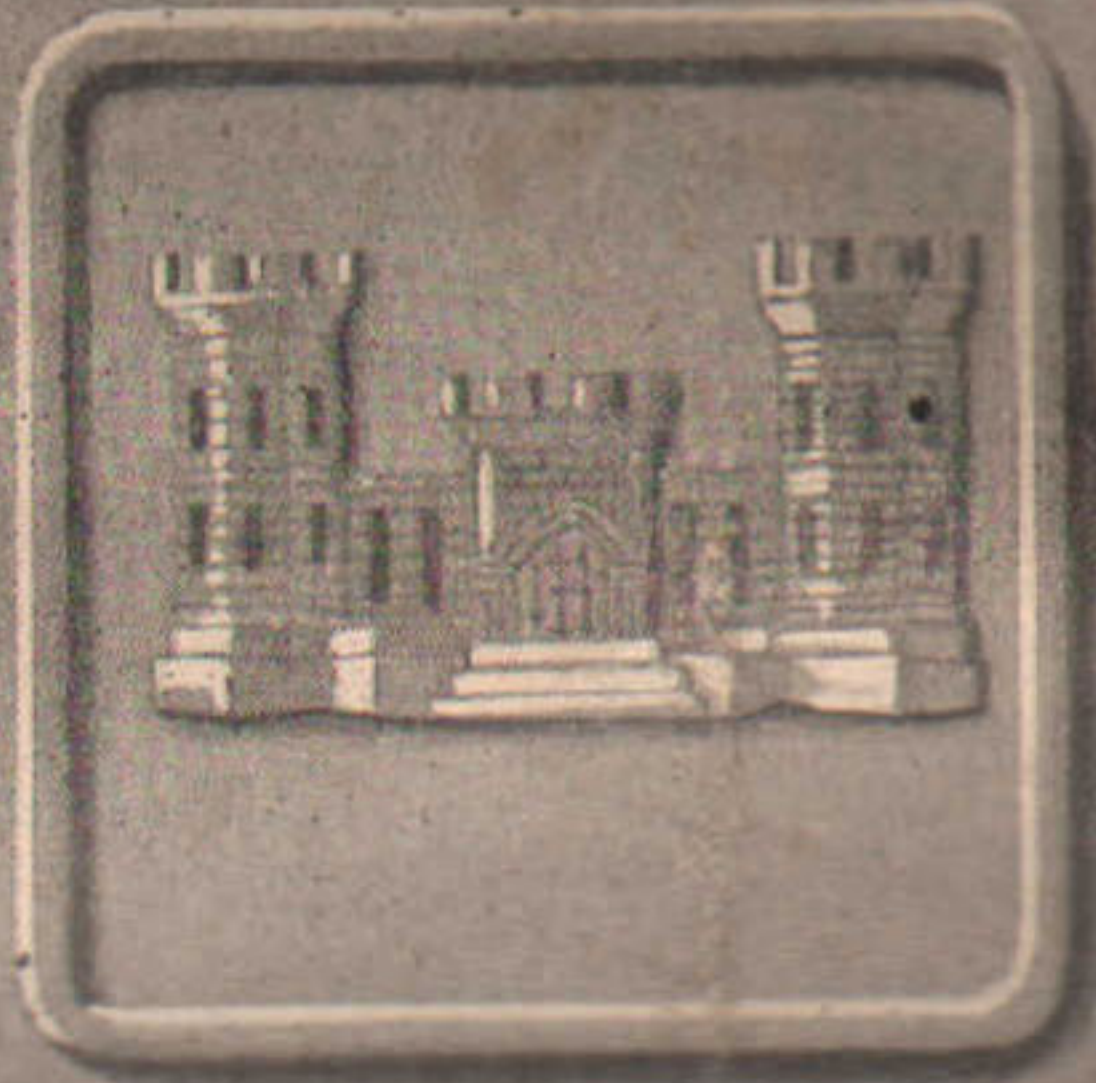
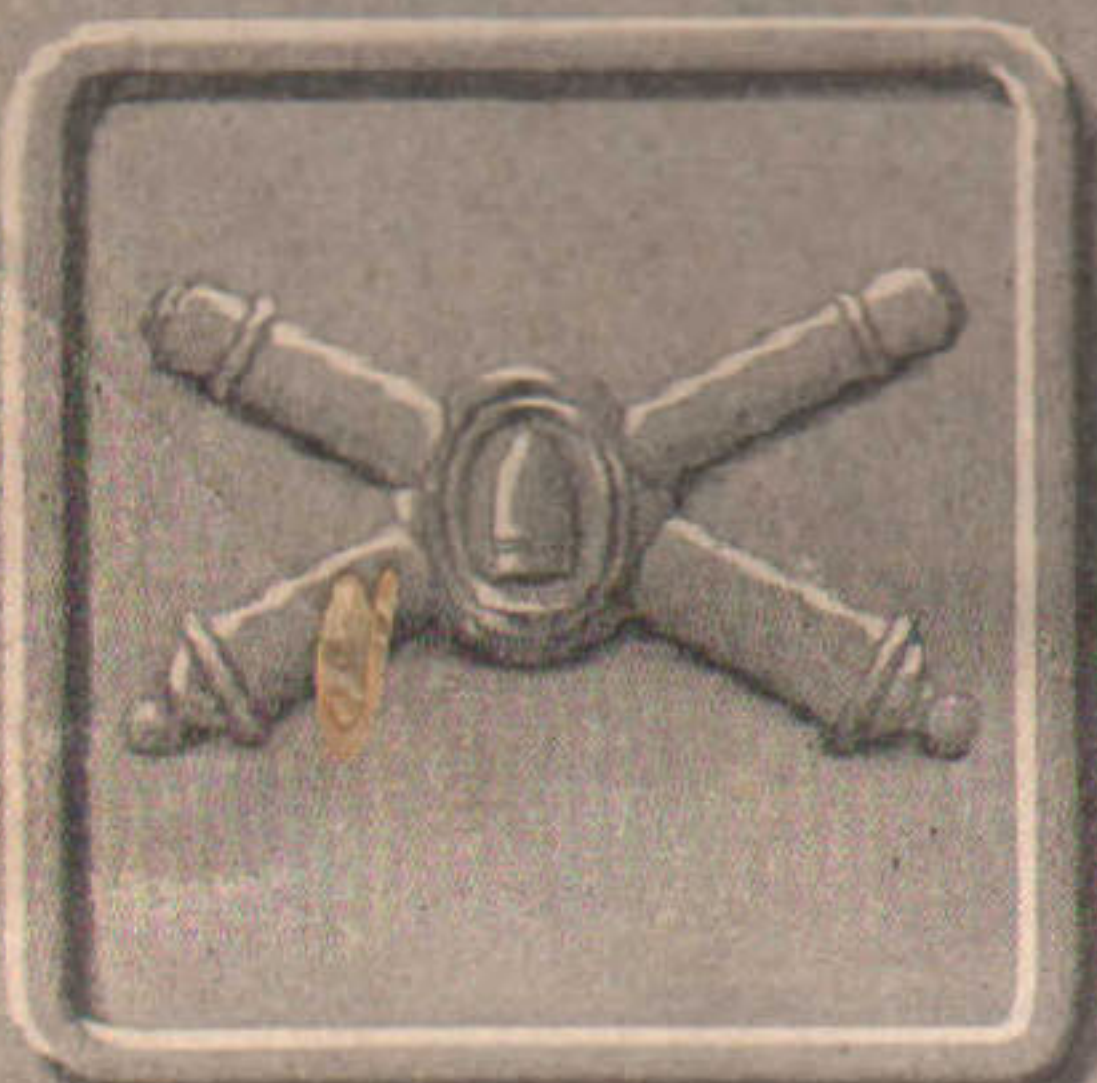
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