THE AMERICAN RIFLEMAN'S MAGAZINE

RIFLE ARMS AND THE MAN

OFFICIAL ORGAN OF THE NATIONAL RIFLE ASSOCIATION OF AMERICA

VOL. LXVII, No. 26 AUGUST 1, 1920

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ARMS AND THE MAN

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The Ordnance Department's New .22 Bolt Action Rifle

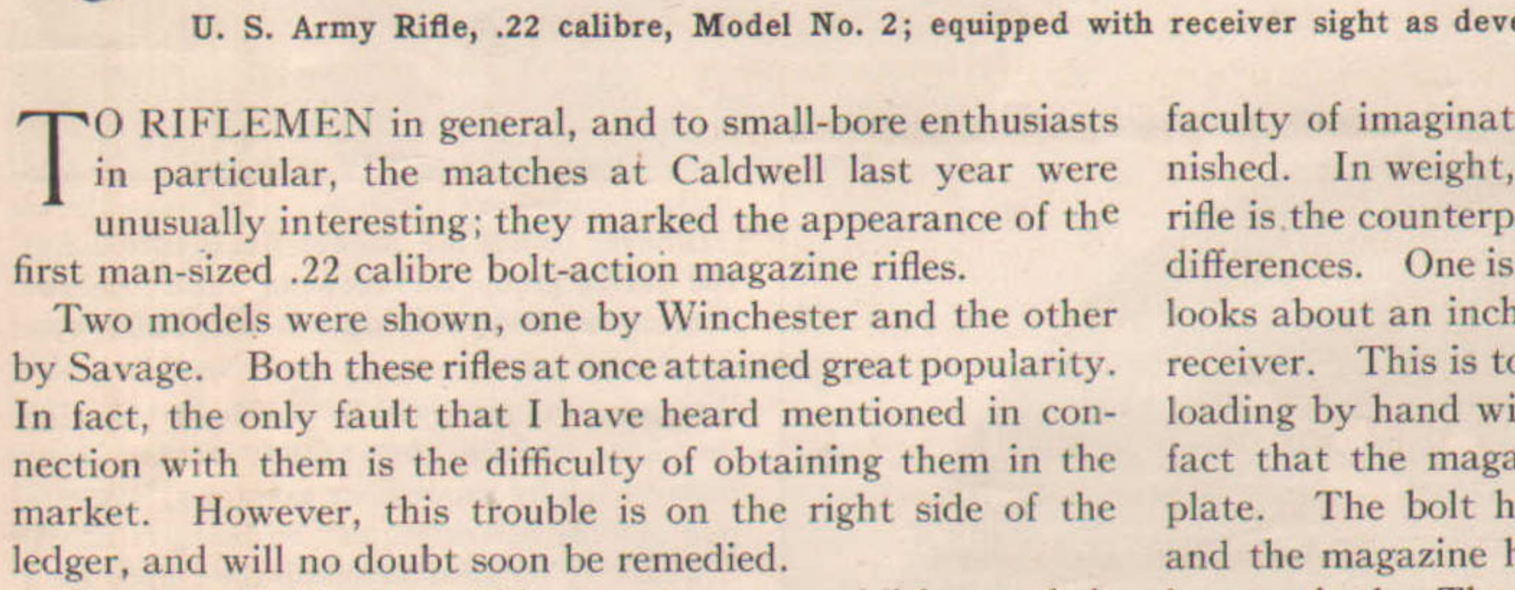
By JULIAN S. HATCHER

U. S. Army Rifle, .22 calibre, Model No. 2; equipped with receiver sight as developed by the Ordnance Department.

TO RIFLEMEN in general, and to small-bore enthusiasts in particular, the matches at Caldwell last year were unusually interesting; they marked the appearance of the first man-sized .22 calibre bolt-action magazine rifles.

Two models were shown, one by Winchester and the other by Savage. Both these rifles at once attained great popularity. In fact, the only fault that I have heard mentioned in connection with them is the difficulty of obtaining them in the market. However, this trouble is on the right side of the ledger, and will no doubt soon be remedied.

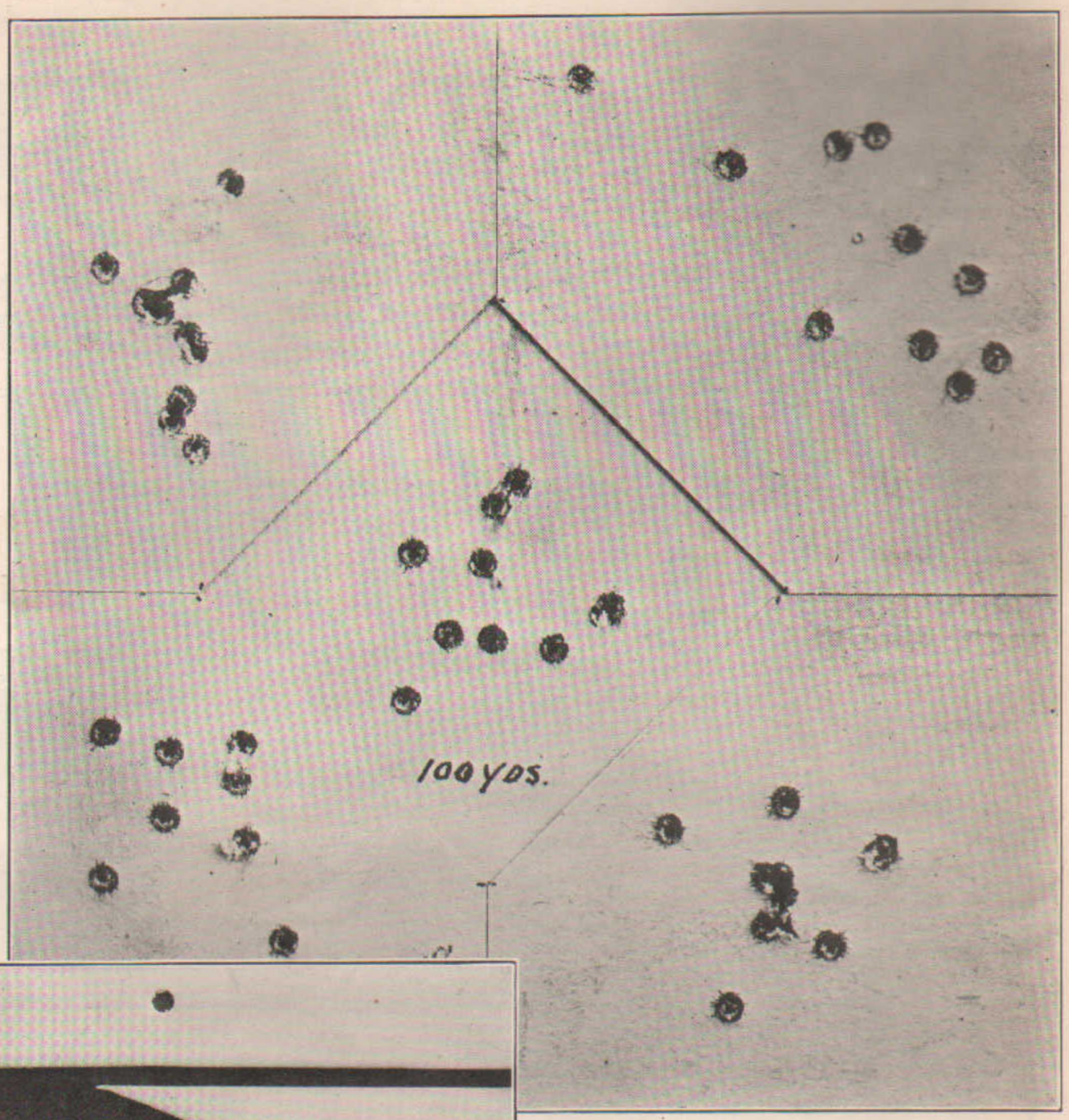
Weapons of this type will have at least one addition to their ranks at Perry this year, for the Ordnance Officer of the National Matches will show the new .22 designed by Army Ordnance. To gain a correct idea of what the rifle looks like, it is only necessary to shut your eyes and imagine a Springfield. However, for the benefit of those who lack the necessary faculty of imagination, the accompanying photograph is furnished. In weight, size, balance, and general appearance, the rifle is the counterpart of the 1903 Springfield, with two small differences. One is in the apparent length of the barrel, which looks about an inch shorter, because it is set farther into the receiver. This is to bring the chamber back to a point where loading by hand will be easy. The other difference is in the fact that the magazine of the .22 projects below the floor-plate. The bolt has the full throw of the Springfield rifle, and the magazine hold five cartridges, so that rapid fire can be practiced. The magazine is detachable, and has a button on the side, so that the follower can be depressed for ease of loading. A great deal of care was used in the magazine design to insure accurate feeding. The bolt action can be used at full speed without either shaving the bullets or deforming the cartridges in any way. The bolt resembles that of the .30 Springfield in appearance, but is really quite different. The front locking lugs on the bolt are removed, and all the locking is done by the safety lug. The bolt head is separate from the rest of the bolt, and does not turn at all. The striker is double pointed, and is not attached to the rest of the firing mechanism. When the bolt is removed from the rifle, the bolt-head, carrying with it the striker, ejector, and extractor, can be detached from the body of the bolt by giving it a fraction of a turn. The firing pin rod, mainspring, cocking piece, sleeve, safety, etc., are the regular Springfield parts. In fact, the

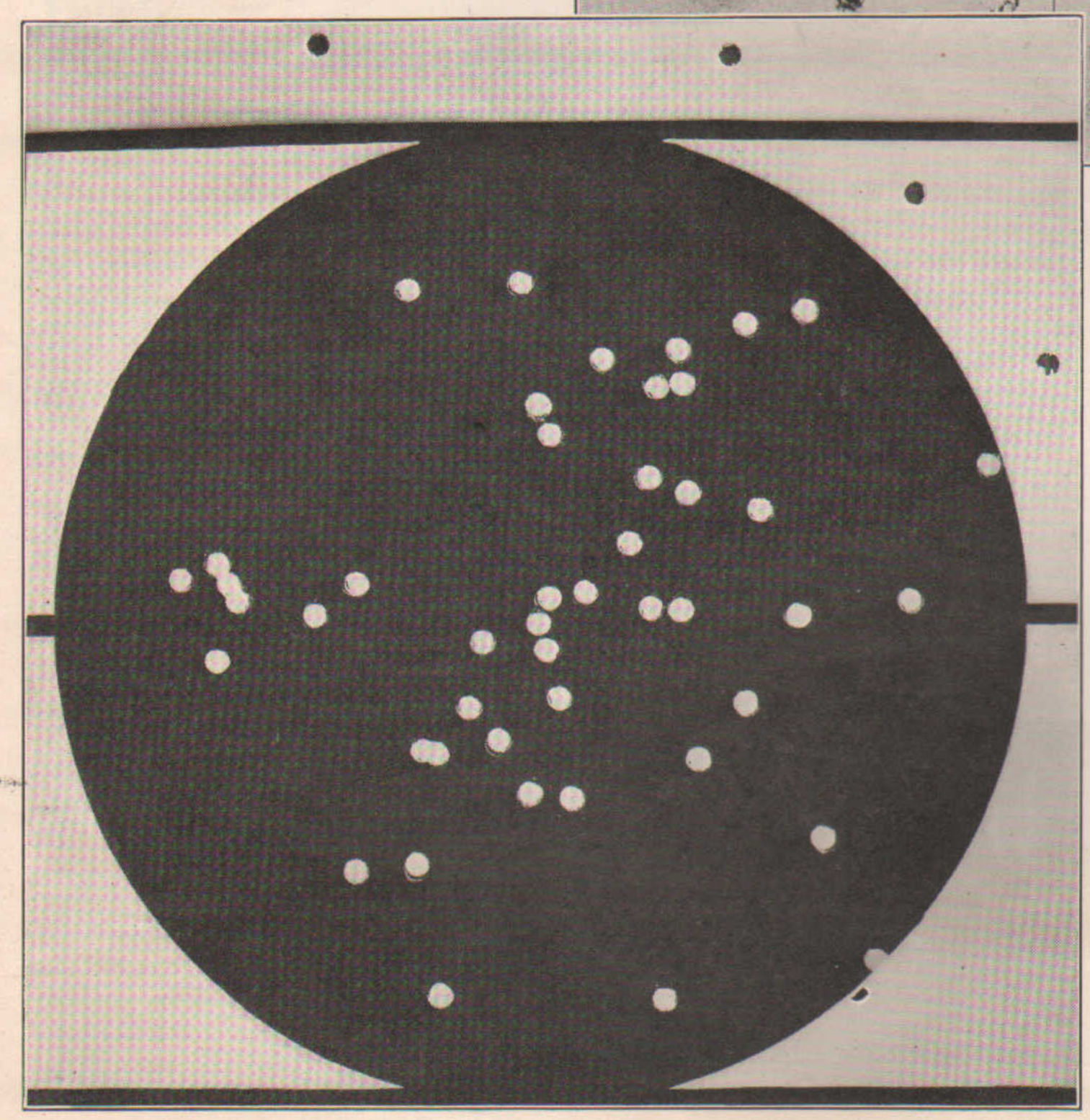


Two previous attempts of the Ordnance Department to develop a satisfactory .22 calibre rifle. Top, the Krag .22 calibre; Bottom, the .22 calibre Springfield.

only parts which are not regular Springfield components are the barrel, bolt assembly, receiver, and magazine. This means that, the rifleman who practices with this weapon gets used to the feel of the service stock and sling, and to the service trigger pull. This feature makes the rifle particularly useful for the purpose for which it was designed—preliminary training for the service rifle.

The plan of using a .22 musket as gallery training for the army rifle is "old stuff," as every military rifleman knows, but perhaps not all of them are aware of what has been attempted along these lines in the past. As a matter of interest I am including a photograph showing two previous weapons of this class in comparison with the new rifle. The one at the top of the picture is the Krag single shot .22, which was chambered for the Pope Armory Special cartridge. The barrel was bored on a diagonal line, the chamber being entirely below the center line, and the bore gradually rising until it came out central at the muzzle. By having the chamber below the center of the bolt, the rim of the cartridge was brought so that the regular firing pin could hit it. A special extractor was fitted, which consisted of a ring encircling the base of the cartridge. This extractor was fastened to two pins which extended into the metal of the barrel, and had spiral springs surrounding them to hold the ring up against the barrel. The regular Krag





Above: What the Model No. 2 rifle did at 100 yards, groups reduced one-third; Below: A group at 200-yards on a 7-inch bull's-eye.

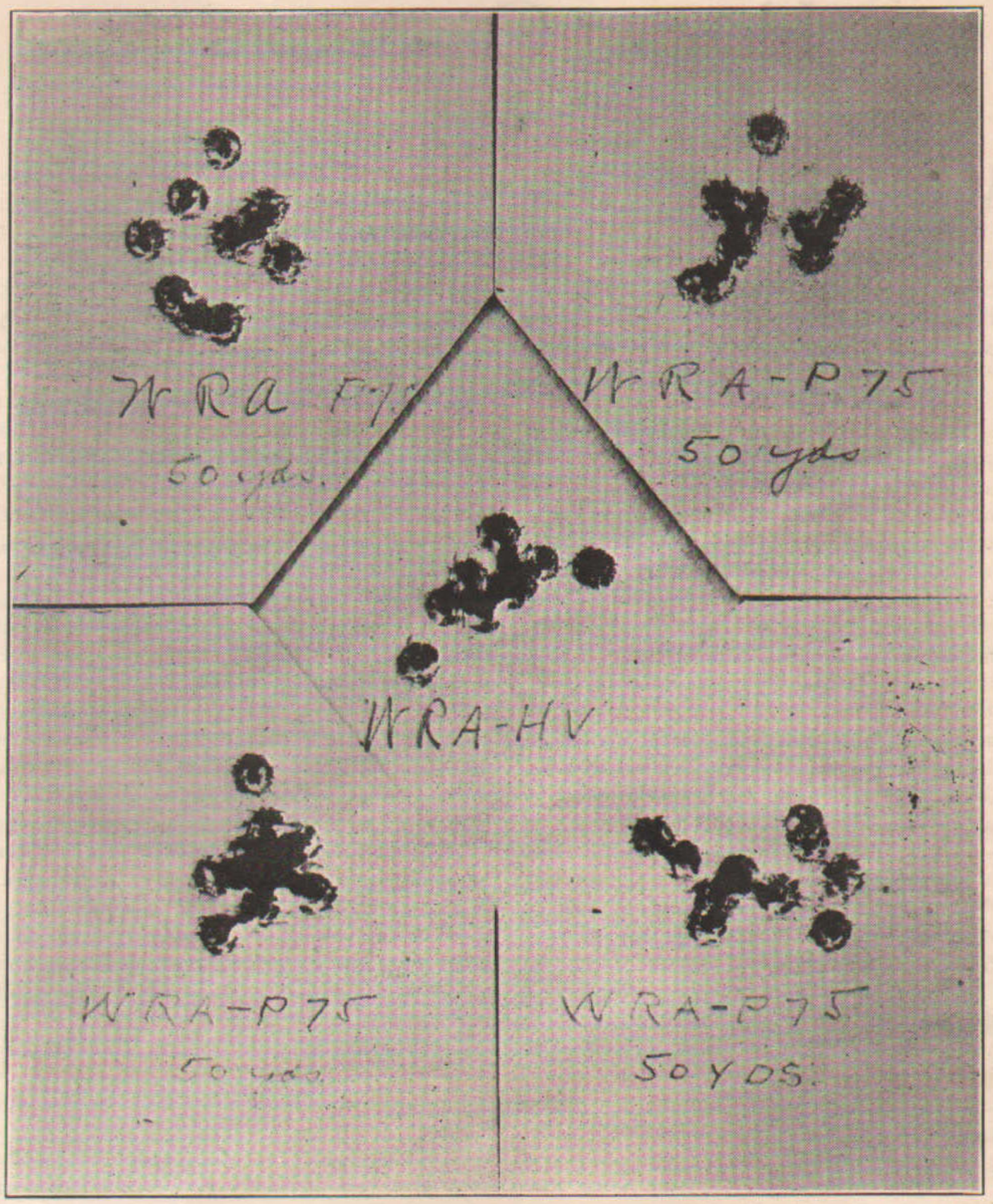
extractor was arranged to pull back this ring for about an inch, then release it. On being pulled back by the regular extractor, it would pull out the cartridge, and on being released, it would fly forward and drop the empty shell into the receiver.

The lower gun in the picture is the .22 single shot Springfield, chambered for the Pope cartridge. This rifle, which was made some years ago, also had the barrel bored off center, but the off-set at the rear was to the right, instead of down. This not only enabled the regular firing pin to hit the .22 rim, but it also enabled the regular extractor to function. The rear end of the forward ring on the receiver was cut away at the right and top to facilitate loading. This exposed the top locking lug entirely, so that only the bottom one functioned. Both of these rifles had the disadvantage of being single-shot weapons.

The next thing to be tried was a .22 calibre rifle with an adapter. The rifle was made just like the regular Springfield, except that the barrel was bored to .22 calibre, and the chamber was made to fit the adapter, which was made about the size of the service cartridge, and was arranged to be loaded with a .22 short. The advantage of this system was

the fact that the adapters, being similar in form to the regular ammunition, could be arranged in clips, and used to simulate clip loading and magazine fire. This rifle was adopted for the service and several thousand were issued. When these rifles got into the hands of troops, the disadvantages began to show up. The main trouble was the fact that ejecting the adapters, they would fall on the ground, or strike some hard object and get full of grit, or become marred at the front end, and very quickly lose their accuracy. As a result the gallery practice situation has never been entirely satisfactory.

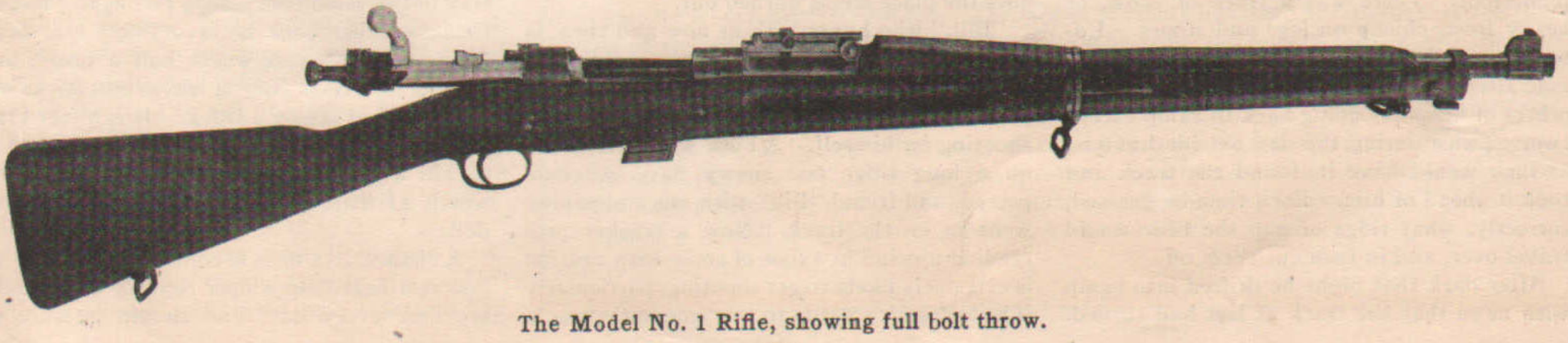
For this reason, I have always wanted to see a gallery practice rifle built for the army to handle the .22 Long Rifle cartridge direct from a magazine, and while I was connected with the Small Arms Division I suggested this. About the same time, Col. Whelen, of the General Staff, suggested a better system, that of using reduced loads for gallery work. Col. Whelen's system which has already been described in *Arms and the Man*, was adopted for service use on account of the great advantage it offered of allowing every man to use his own rifle for gallery work, and thus become familiar with his own sling adjustment and trigger pull. However, while Col. Whelen's system was being perfected by the design of proper loading tools, etc., Army Ordnance was going ahead with the manufacture of a suitable .22. The mechanism of this rifle was worked out by Mr. Fred Coon, of Springfield Armory, and the other features, including chamber and bore dimensions, by Mr. A. L. Woodworth. Two samples, both alike, were built. They were chambered for the standard long rifle cartridge, and it was soon found that the different makes of cartridge varied so that it was impossible to build a rifle that would fit all kinds. The situation was complicated by the necessity of having to consider two makes of long rifle outdoor type cartridge, both having different diameter bullets. We worked out the best compromise possible, and obtained *fair* accuracy with all makes. The first rifle finished, known as Model No. 1, was sent to Washington to be tested, probably at Camp Benning, and the other known as Model No. 2, was retained at Springfield for further experiments. The first thing we did to No. 2 was to put a Lyman 48 rear sight on it, and the next thing we did was to build a new barrel worked up by Mr. Woodworth to fit one kind of ammunition only, which happened to be the U. S. Cartridge Co.'s .22 N.R.A. The improvement in accuracy was startling. The mean radius was reduced to about half that



Groups at 50 yards with Rifle No. 2 of the new design.

of the No. 1 rifle. Using U. S. .22 N.R.A., 50 shots were fired at a 7-inch bull's-eye at 200 yards by Mr. Woodworth, muzzle rest, and 45 of them entered the black. A photograph of this target is appended, as well as photographs of groups made at 50 and 100 yards. The 50-yard groups were made with Winchester Precision .22. The rifle was also tried with lower velocity ammunition, and made very good targets at the shorter ranges, but not such good ones at 200 yards. At one time, 400 rounds were fired continuously without cleaning, and there was no indication of leading. The rifle was also used for both single shots and magazine fire. No difference in accuracy could be detected. We think that the gun is fully as accurate as the best commercial .22, which is saying a lot.

If there is anything else you would like to know about it, drop around to the Ordnance Office, Camp Perry. The rifle will be there, and so will Mr. Woodworth and I, ready for questions, and equipped with our best set of answers.



The Model No. 1 Rifle, showing full bolt throw.

Hunting Companions

By JOHN LYNN

A NEW BRUNSWICK guide of Colonel Whelen's marks the best remembered story of the scores that hunter and author has given us. "He was the most efficient man I ever met," the Colonel remarks, and cites instance after instance to prove it. If recollection serves accurately, the opinion was expressed that were this man placed in command of the Allied forces in the then raging European war, he would run it with as much success as anyone else.

Guide or millionaire companion, city man or farmer, not everyone with whom one finds himself hunting turns out to be so gifted. Some that will be mentioned were certainly out of place in the woods. The big game woods and fields are great upsetters of our so-called civilized values. Almost anyone who feels the stirrings of desire for a chase can read a story of the woods and imagine himself a hunter, but to go through successfully with the realities of a trip puts a person to a harder test.

Deer, bear and other big game hunting is what reveals the truth. Rabbit, squirrel or quail trips bring out the same qualities but they put so much less pressure on a person that he has more chance to maintain any veneer that by nature or artificial desire he unfortunately carries.

Edward W. is the man in my experience who perhaps comes the nearest to matching Col. Whelen's New Brunswick guide. He is built a little thick and heavy for easiest traveling, especially in later years, but he has more patience and persistence in the woods than anyone else I ever knew, he is a good shot, and he is a true lover of forests and forest life. That poor word "sportsman" does not apply to him at all—it should be reserved for application to a totally different class of people than big-game hunters, anyhow.

Most of our hunting has been among brush and thick timber of mountains, where it was necessary to go in parties with a camp. Deer and bear both could be killed sometimes by slipping up on their tracks in the snow, to shoot them when they jumped from their beds, or before they jumped. Mostly, however, the hunting has had to be done by posting watchers on "crossings" while the rest of the party "drove" ridges or swamps that might contain game, or followed tracks in order to jump and drive out game.

A bear was wounded slightly one morning as the net result of four close-range shots by a tenderfoot. There was a trace of snow, or heavy frost, chiefly on logs and stones. Edward unraveled that track for hour after hour, mile after mile, sticking to it in spite of all the others of his party going back to camp except two. Twice during the day outside hunters, as luck would have it, found the track and took it ahead of him. Each time he guessed, correctly, what ridge or gap the bear would travel over, and in turn cut them off.

After dark that night he drifted into camp with news that the track at last had turned. His Honor the bear was heading back our way again. It was in the afternoon of the next day that the track finally was followed to a small ridge which we surrounded. The bear then was tracked up through the brush and secured as it attempted to spirit itself away through a neck of thick brush in which a watcher was ready.

It is such persistence which makes a hunt successful both from the standpoint of game secured and of morale, or pleasure. The latter does not necessarily depend on the former. Few men have the sticking quality of Edward.

He also has a remarkable faculty of seeing game.

"There it goes," he would call, waving a hand toward a distant hillside from which the flash of a white tail had caught his eagle eye.

Once he threw his rifle to his eye as we were grouped round a spring, aiming toward a rocky point three hundred yeards away, and had seen big horns and killed a buck with two shots before anyone else knew it was there. Too many would-be hunters let game glide by unseen; or, seeing it, waste their precious few seconds without locating horns or a vital spot. A two-weeks-per-year hunter can not expect to have the roving, all-seeing eye of the true woodsman, but every hunter should know how to allow his vision to relax so it will catch movements, shape or color in a flash.

Edward has a hobby. It is what he calls "instantaneous aim." He means that when a hunter throws his rifle to his shoulder, the sights already should be lined on the game, without the necessity of shifting the muzzle. It is a matter of each man's familiarity with one rifle, plus correct sights. No natural talent is required, however, to reach this sort of skill. As Edward points out, it is first a matter of understanding what is required, then of practice.

It was forty odd years ago that this man first hunted big game. He used a muzzle loader, and he has come up from that kind of rifle to the use of a 30–06. His career and effectiveness with a rifle make him a living example of the reason why soldiers can not be made good riflemen on short notice. Inevitably within a few years he will be seen in the woods no more. He will be missed. In fact, his old companions then may find themselves wondering why the charm has deserted their favorite hunting grounds, for men and places become identified, and when the man goes the place seems burned out.

"Bill," who hunts with us now and then, is a long-legged, rangy man with the makings of a good companion provided two faults did not prevent. The first is that he wants the actual shooting for himself. A buck was surrounded on a long ridge one snowy day, watchers posted, and friend "Bill" with one companion went in on the track. Now a tracker proceeding upwind in a foot of snow with caution is extremely likely to get shooting, particularly if he keeps fifty yards to one side of the track. That manouver was "Bill's" special job. When therefore, seven or eight steady shots were heard a half mile ahead of the trackers within a few minutes after they started, everyone supposed an outside hunter had headed off the game before it got out to our watchers.

They were wrong. "Bill" had shifted the tracking contract all to his helper, then had run through the woods to a point two or three hundred yards in front of the best crossing, risking scaring the deer back. But luck was with him that time, for the buck came out and he killed it before it reached the regular watcher. He would do that trick, and others like it, every time a chance offered. The usual result of his presence was to warn the game away before anyone got to see it.

His second fault is held in common with several otherwise excellent companions who come and go occasionally. They will hunt for two days, or three, with enthusiasm, then have their fill of it. If the camp is within striking distance of home, back to the apron strings they travel. It isn't a matter of getting game or not. You couldn't hire them to stay in the woods throughout a season. If they have been fortunate enough to kill something their excuse is that they have their bag now, and have no further object in staying (forgetting that the rest of the party would welcome a return of assistance rendered). If they have failed to connect, the excuse is that hunting doesn't pay! Once "Bill's" attack struck him suddenly as we happened to be hunting from camp in the direction of home, only a few miles away. Nothing would do but that he should leave us to go directly down a little valley and so out of the woods. When he was only a mile or so on his way, still in plain hearing, we killed the biggest buck we have ever brought in.

This type of man has not been a pleasant camping companion. He has enforced idle days on us, in addition to shifting the burden of caring for the camp, and perhaps moving it into the woods and out again.

What is amusing in a beginner may be exasperating in a man who has hunted. For instance, it is nothing uncommon for a city friend to step up and ask modestly: "I would like to shoot a bear this year. I haven't much time. You surely can arrange things so that I can arrive at your railroad station from a sleeper in the morning, drive out to your camp and kill it that day, and get back on a sleeper that night." Such a little thing! Absolutely modest!

Many an old hunter has tramped the woods for a lifetime without shooting a bear. It is a fact that not one hunter in ten, in these later days, ever gets the honor, even though they stay in the woods the season through. To get them, weather must be favorable. One may tramp about woods where half a dozen are "laying" on their piles of leaves and sticks for days without seeing a track. It is a fact that the man who is assured, and gets, a fair chance to kill a bear can consider the opportunity worth at least five hundred or a thousand dollars.

A chance at a deer is common compared to one at a bear. In a deer country one should see deer every day, and should be sure of

big buck in a week or two. Yet some men never pass from the stage of the beginner who demands meat and lots of it the first two or three days. Paul K. and several others I have known were of this type. After a week of no positive luck, Paul once remarked:

"I could have hunted rabbits this long and had more meat. If only I was in ——— woods, I could have some fun."

Alas, Paul had no grasp of the spirit of a big game hunt of the twentieth century, in the more settled parts of America. And he thereby eliminated himself from the old camp in seasons to come.

George C. has the commercial spirit whirling so fast within him that he couldn't slow it down for his two weeks in camp. He arranged for a man to bring in his mail every other day, and spent the best part of several valuable mornings getting mail out, meanwhile bewailing the absence of a telephone. It was his brilliant idea that a money value should be placed on all game killed, including the hides, and the total divided pro-rata among those hunters actually present when each kill was made. Any member of the party taking a hide should pay other members for their shares in it. This plan he yielded under protest for a couple of seasons during which only deer were killed. The old camp rule provided that all meat should be divided equally and that the hide always should go to the man who put the first bullet hole through it.

Then one evening at the tail end of a hunt one of the old sour-doughs, slipping silently toward camp over a likely hill, put the business to a bear with his 45–70 so neatly that he had it bled and the insides out before the others reached him. Our friend George rejoiced exceedingly, helped to carry the bear to camp—and that night presented the fortunate killer with a written statement, on a printed billhead, for $4 as his estimated share in the value of the hide! With the ending of that hunt, so passed George from our midst.

It seems hard for some people to grasp that the hunting of big game is a privilege to be accepted thankfully when the chance comes, worth more than it may cost, whatever that may be. There was the case of young Radcliff, who all one summer deviled us to go along, but who reniged at the last minute because the camp was to be located too far away.

"It wouldn't pay one to travel two hundred miles for only a week's hunt," he explained.

The old hunter he was talking to, who often had traveled a thousand miles for the identical privilege this upstart was rejecting, replied.

"It certainly wouldn't". Glad you thought of that in time."

Radcliff had a couple hundred 30–06 cartridges that had been specially loaded for the trip by another of the party, *and given him without charge* in the hope of making the most of any shots the young man might have. These he tried to sell at current war figures. Yes, he will have to reorganize himself slightly before he will find big game hunting properly enjoyable and profitable, or himself a popular companion.

Now and then there comes from some backward community (farm, mine or city) an infantile-minded individual who wants to kill everything he sees. We had one such specimen who shot snow birds with a 405 Winchester, using Hoxie bullets, just to see the explosion of feathers. He also weeded out the jay birds, killed a porcupine and let it lie to rot, and was all primed to shoot any deer he saw, leaving the matter of horns for later determination.

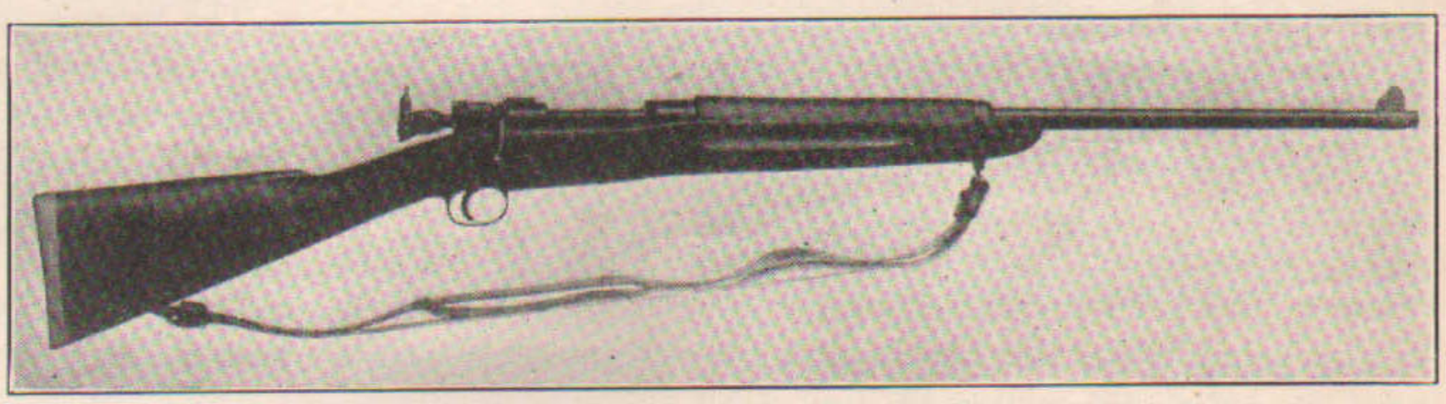
Not nearly so objectionable but still not pleasant, was another fellow who persisted in shooting promiscously whenever other things failed to occupy his mind. It wasn't that his shooting was dangerous—he was careful where the bullets went—his banging away at stumps and the like was confusing, and alarmed the game. He will make a fair to medium hunter some day when he learns to use up his surplus ammunition before entering the woods.

Amusing but troublesome is the fellow who persists in getting lost. Hale S. liked above all things to follow a track in the snow but never would take the trouble to remember the lay of the country, nor permit instructions to soak in. Now a scared bear or a deer is not actuated by limitations of places to feed or to lay his head. Hale would usually fail to wake up until the second or third hour he was on a track, if the game was not shot meanwhile, to find himself away off in some No Man's Land with no signboards showing the way back.

By night he always made it back to camp except once. That time he was to go round to the farther end of a hill as a watcher, and wait until the drivers came through to him. It was carefully explained that the hill was shaped exactly like a rifle stock; that the men then were standing at what would be the neck end of the stock, intending to drive toward the butt-plate end. His job was to skirt the left-hand edge of the hill for a mile, going round to the middle of the butt-plate end, there to take station on an old rotten pile of logs he would find. Instead of doing so, he traveled a quarter of a mile, until he came to a draft in the hill that might correspond in position to the pistol grip on the stock. Here he waited awhile, forgetting to check up the distance or look for the log pile. Drivers failed to appear. He feverishly climbed the hill, and for the rest of that day and all of the following night tore his clothes whisking through the brush in search of camp.

Hunters unable to maintain location by means of their own noodles have still enjoyed the woods with us when they make a point of keeping close to others who do not get mixed in directions. Men who neither know themselves nor will obey suggestions, however, are a liability on the rest of the crew. It is not their getting lost over night, requiring search, that causes their depreciation below par as

(*Continued on page 9*)



THE AMERICAN RIFLE

I T OCCURRED to me that in connection with your series "The American Rifle—A Type," the accompanying cut of my remodelled Springfield might be of interest to *Arms and the Man* readers. While this particular arm as remodelled does not come exactly under the head of the fine type, the handsomely stocked American sporter, such as your article aims to describe, as it is more strictly speaking, an half-way affair; yet it is not such a bad looking weapon at that and its balance and handiness is almost, if not quite, as perfect as the costly remodelled arms turned out by the expert gunstockers.

My idea was to utilize the military stock, turning it into what might be termed a sporting carbine form, making it a thoroughly serviceable hunting rifle and as reasonably pleasing to the eye as possible without the costliness of the extra-fine made-to-order "sporters." I need not take space to describe the various steps in the alteration as by examination of the cut they are fairly obvious, but mention might be made of the butt-plate. This was conceived and practically wholly made by my friend, Dr. Russell. It is of aluminum, one-half inch thick at its center and so lengthening the stock by that amount which is correct for me. The face of the plate has just the right curves and pitch, is corrugated and in it is incorporated the trap from the service butt-plate. This rifle with sling-strap attached and oil and thong case in butt weighs just 8½ pounds.

R. D. TALMAGE.

Note—This is an excellent way of remodelling a military rifle for sporting purposes at small expense. Mr. Talmage has furnished me with one of his aluminum butt-plates, and it is perfectly splendid. It lengthens the regular military stock just the right amount, and it is so well shaped that it greatly lessens the effect of recoil.

T.W.

ARMS AND THE MAN

1111 WOODWARD BUILDING, WASHINGTON, D. C.

SEMI-MONTHLY—ON THE 1st AND 15th DAY

Editor
BRIG.-GEN. FRED H. PHILLIPS, JR., Secretary N. R. A.

Associate Editor
KENDRICK SCOFIELD

Entered as second-class matter, April 1, 1908, at the post-office at Washington, D. C., under the Act of Congress of March 3, 1879.

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 a 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.

NEW PRIZES FOR RIFLEMEN

THE National Rifle Association Matches of 1920 find a new and impressive trophy added to the old and honorable list that includes the Wimbledon cup, the Leach cup and the Marine Corps cup; also an attractive prize added to the Grand Aggregate which should stimulate interest in the winning of matches with the service rifle. The new trophy is a gift from a coterie of riflemen whose names have long been associated with the national matches; the Grand Aggregate prize is the gift of Mrs. K. K. V. Casey—"Mother Casey"—as she is known to hundred of riflemen.

The new trophy, known as the Camp Perry Instructors Trophy, has been presented for perpetual competition, just as the Wimbledon, the Leach, and the Marine Corps cups were presented, the winner keeping it for one year and keeping in his possession the gold medal which is to be his permanent property.

In 1918, for the first time in the history of our wars, a school was established for the sole purpose of teaching the use of small arms. It was confined entirely to the officers of our new and gigantic army, and graduated between three and four thousand.

The instructors of the school were chosen from the old and experienced riflemen and pistol men of the country, and the list included many men whose names are bright in the rifle shooting world.

After the war the instructors of the Small Arms Firing School, which was commanded by Colonel Morton C. Mumma, organized an association—the Camp Perry Instructors Association—to perpetuate the work of the school.

At the suggestion of Major S. J. Fort the Association decided in 1920 to present to the National Rifle Association a valuable trophy for perpetual competition, as an encouragement toward skill with both rifle and pistol, and to commemorate the work of the Firing School.

The trophy has taken the form of a Tiffany bronze, an impressive statue of Nathan Hale, standing with his hands and ankles lashed with the British executioner's ropes, and evidently speaking the words that have become familiar to every American schoolboy.

It is as beautiful a bronze as the famous Soldier of Marathon, and more significant, as representing an American patriot, and is considered one of MacMonnies' best.

The bronze and the medal go to the man who makes the high total with the rifle and pistol over a course that is the same as the first stage of the National Individual and the first stage of the National Pistol Matches.

The old timers of the game will remember that "Mother Casey" has attended most of the National Matches and is as enthusiastic in the promotion of rifle practice as her husband. It was this love of the shooting game which prompted Mrs. Casey's gift.

Concerning Various Hand Guns

By F. G. WILMER

COLT'S Patent Firearms Manufacturing Co. are working out plans for the manufacture of a new .38 calibre automatic pistol that will be of the same design as the .45 army model but of less weight in proportion to the smaller calibre. It is understood that the new arm will soon make its appearance in the market as Colt's have dealers pretty well supplied with their other models and no .38 automatics have been made for a long time.

The appearance of this new arm will be welcomed by very many pistol marksmen who have long wanted a pistol made like the .45 army pattern but of .38 calibre, as the greater velocity of the .38 cartridge, as compared with the .45 has made it highly popular with numerous shooters. According to the table given in Himmelwright's book "The Pistol and Revolver," the muzzle velocity of the .38 automatic cartridge is 1,070 foot seconds as compared with 816 for the .45 automatic cartridge. Moreover, the muzzle energy of the .38 is given as 336 as against 296 for the .45. But these figures refer to tests made with a .38 automatic having a 6-inch barrel, while all of the .45's have 5-inch barrels. Penetration in 7–8-inch pine boards is given as 9 for the .38 and 6 for the 45.

Foreign imitations of Smith & Wesson revolvers are now frequently to be seen in the shops of dealers in firearms. Not that the regular trade is generally handling these imitations, some of which are surprisingly accurate, but they are often to be found in pawnshops and in the show windows of dealers in pawnbrokers goods, including second-hand arms, although the foreign revolvers are mostly new, with occasionally one that has been used.

Recently there have been displayed in the shops of dealers of this class in Baltimore, Spanish imitations of S. & W. revolvers which only an expert could distinguish from the genuine, so far as appearance, finish and pattern are concerned. These arms are often styled "O. H." revolvers. Two new ones, one blue and the other nickel, are practically exact reproductions of the Smith & Wesson .38 military and police revolver, with 5-inch barrel. They have the front cylinder lock. The finish of these goods is so good that close inspection only shows that it is not quite up to the Smith & Wesson standards. Another lack is the absence of a strain screw in the front of the butt to tighten the main spring. The barrels of these revolvers, instead of bearing the name of a manufacturer, have a legend begining thus: "Best American cartridges are those that fit best in the O. H. revolver," etc. Following this is a list of patent dates.

Perhaps the initials "O. H." are derived from the factory of Orbea Hermanos y Cia., Eibar, Guipuzcoa, Spain (otherwise Espana). This plant for a number of years has made revolvers closely resembling the Smith & Wesson arms of the older patterns, but not

so well made as those now coming to this country. One for instance, which was used on the Spanish ships sunk at Santiago, is a .44 calibre double action arm with 6-inch barrel and bearing the name of this firm, which translated is "Orbea Brothers & Co."

Another revolver (this one second-hand) and apparently from the same factory, has a 4-inch barrel and there is a ring in the butt for a lanyard. It is stamped on the side of the barrel "Orbea y Cia, Eibar."

These O. H. revolvers also appear in .32 calibre, likewise exact imitation of the S. & W. seemingly in all details, except the strain screw. But these .32's do not have the rounded butt; they are square butt, not pieced out with an elongated wooden handle as are the genuine, but with metal fully squared out to the bottom of the handles just like the larger .38 calibre. But the .32 calibres are in every way smaller for pocket use. Beneath, just back of the trigger guard, is the word "Spain."

There is also another variety of these .32 calibre imitations. One in nickel finish has walnut stocks with gilded monogram set in like the real thing. This is stamped on the barrel "Trocaola Aramzabal y Cia., Eibar, (Espana.)"

Notwithstanding the generally fine appearance of the foreign arms thus described it is scarcely probable that they are as carefully put together with regard to exact alignment of cylinder and barrel as are the American made arms of the same type. It was stated that they sold at retail for about $10 less than the present prices of the genuine American revolvers. At another place it was said that they sold at wholesale sufficiently low to allow a retail price several dollars less than this. Other imitations may be expected.

HUNTING COMPANIONS

(*Continued from page 7*)

camp mates, so much as their failure to carry out the hour by hour plans of the actual hunting.

Another whose habits cause trouble is the man who will not dress suitably—who goes with equipment too light, or too heavy, or otherwise unsuited for conditions. Most of our hunting is in snow and low temperatures. Sometimes there is a thaw in the middle of the day. Swampy ground always is wet underfoot. Rubber foot-wear and macanaw clothing or its equivalent is essential.

Two of our best hunters are continually running afoul of these conditions. One imagines he is "tough." It would be a comedown for him to wear a cap down over his ears, or a heavy coat that would button close about the neck. The other is somewhat of a dandy. His desire to look neat keeps him in small leather shoes, leggings and light upper clothing. The "cold-proof" man missed a splendid chance at a bear last fall because he was stiffened from standing on a crossing for an hour on a frosty day. The other fellow nearly always is lame in one way or another after the first day. He nearly always goes home with a severe cold.

The prize for efficiency in dress must go to those who slip on heavy woolen underwear, wool shirts, macanaw trousers and coat or stag shirt, two or three pairs of heavy woolen socks, and rubber artics or lumberman's gums, and leave everything else at home. They can stand the foot traveling and the freezings. They come through all sorts of weather and work with less wear than through an equal time with feet propped over a radiator.

Men differ in their ways of actually shooting game when the chance comes as much as they do in their clothes. One man whose limit is a single shot usually hits the game—but one bullet, contrary to the popular idea, seldom secures a deer or very seldom a bear. This fellow will drop a deer or tear a chunk out of a bear, and when it escapes wounded will explain that he thought the animal was finished or would lie down soon. Another starts to shoot the instant a buck or bear appears, far or near. One buck he killed was first fired upon at a range of 400 yards. He screwed up the stem of his peep sight until it dropped out. Fortunately the deer was coming toward him, and kept on coming. He was enabled to get in a finishing shot at fifty feet. Total of cartridges fired by him in this rally was thirty.

It takes game experience, disappointing experience, plus plenty of rifle practice, to make a killer in the woods. In the old days, back a generation and more, hunters fired deliberately at standing animals, sometimes getting them and sometimes not. If a deer did not stop within a short distance after being hit, they let it go, concluding it was hit only lightly. Another deer was easier to locate. As things are now one first looks for horns on his deer. After brush and distance permit a sure identification of horns, snap shooting at the rapidly disappearing flash is in order. If the game goes down at the first shot the good hunter does not finally congratulate himself that it is his, but continues to pump lead into it so long as it kicks.

This method results in a badly torn carcass, it is true, but meat shot up is better than wounded deer trailing away to die beyond reach. When one has no time to pick his spot on the animal he must recognize that a hit almost everywhere will knock a deer down, but only a vital hit, seldom assured, will keep it down.

A good hunter often has secured wounded or unwounded bucks, or bear, after they have passed completely beyond him in brush, by filling its wake with bullets. There is no danger to companions provided the game is first seen clearly enough to identify it unmistakably. This method frequently offers to the wholly collected man his only chance to get game in brush or when it jumps from a track or unexpectedly in the woods.

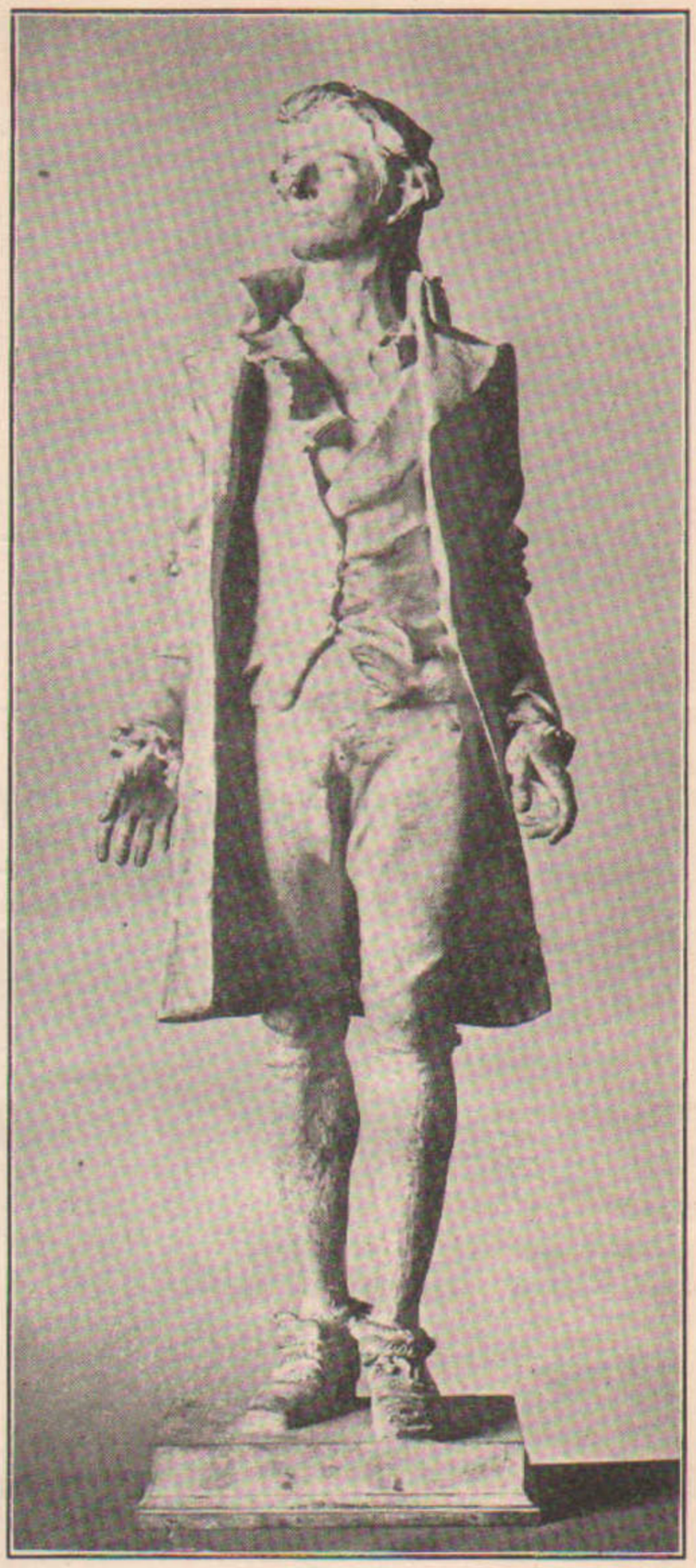
The man who misses is an abomination. The work of the entire crew may funnel down at the end of a day or two days to a short drive toward a single crossing. If the watcher lets a buck or a bear go by he may be excused once, but after such a thing happens twice he ought to go home for practice. One such man cluttered up good woods space among us not many years ago. He would miss—and blame it on his barrel, his sights, his bullets. The next season he would show up with a new rifle, repeat the misses—and come through with a new batch of bug-house theory as excuses that he called experience and facts. If a man has an accurate, powerful rifle to begin with he has about as much business changing guns as changing wives. It has been observed that success in quick rifle shooting usually depends on familiarity with the rifle used, and enough familiarity is not acquired in one year.

One of the snakes in the grass we have had to deal with is the man who hunts a little, but yet apologizes with himself for doing so.

"It's a bum's pleasure," he keeps saying. "It doesn't pay. No one but a ne'er-do-well lets himself be found running round in the woods with a gun. Decent men are back at their work. I'm going home before someone catches me here."

Our specimen appeared with a borrowed rifle. He had plenty of money, too.

"What's the use of me investing my good money in a gun," he said. "You don't catch me parting with twenty-five whole dollars for one, just to get a little questionable sport."



The trophy presented to the N.R.A. by the Camp Perry Instructors' Association. It is a bronze and depicts Nathan Hale at the hour of his death.

Well, all these various and sundry would-be big-game hunters lack the bringing up that alone seems capable of giving right point of view toward rifle shooting, game getting, and living in the woods. It is a pity, too, for they don't know what they are missing. Theirs is the loss. A nucleus of time-tried, sweat-tested hunters remain to start the camp fire each fall. Some are old and some are young, and occasionally we discover a youth who exhibits the qualifications to become a member, one by one—physical and mental ability to travel on his feet, shooting capacity, loyalty, intelligence cleanliness, a love for the woods, and so on.

The hunter who stands the gaff gets a good deal of enjoyment from other things than killing. He likes to watch beautiful evergreens. He becomes a weather prophet, and enjoys storms. In time he gets exceedingly wise to the nature and habits of wild things, enjoying seeing them and playing with them. When he goes to watch a crossing you find him selecting thick brush just under the brow of a hill, or at the head or foot of a ravine, instead of planting himself by an open space. Usually deer and bear pass by within a few feet of him. He can stand hard trips, he sleeps well anywhere, he doesn't complain, and he stays the season out without worrying about business or home. And finally, when he shoots it is not as with tenderfoot, all buck and no rifle. Sights come in for due attention, with the result that his game gets a sufficient number of bullets to make it quiet down.

As the seasons pass, a hunter becomes more critical and proud of his own physical, mental and material equipment that he takes to the woods, simplifying it and insisting on more efficiency. He is less ready to chip in for the benefit of the casual "sport" who wants ten years' results in a few days, and he places more value on men who have caught the spirit of big game hunting, either old companions or beginners eager to learn.

The Best from Contemporary Sources

"TAKE care of that barrel, kid, or I'll ——!" I didn't wait to hear the end of his threat, but slithered out of the armoury in possession of my first gun and as happy as a sand-boy.

"Take care of that Barrel!"

The old armourer of the — Hampshires was a good sort, knew his job, and was passionately fond of "telling the tale" to the lads during the delicate process of coaxing a patch of rust out of a Martini barrel which had been returned to stores, and, taking most things into consideration, his vituperative criticism was thoroughly justified, although we resented it and voted him an old bear. However, after many years of experience in service rifle and small-bore clubs in connection with the old Volunteer Territorial and Miniature Rifle Club movement, I am firmly convinced that it is mainly owing to neglect and faulty cleaning that a very large percentage of rifle barrels fail to respond to the earnest appeal for that particular accuracy which is so essential to the would-be marksman to-day.

During the past few years of active service with the colors I have witnessed many scenes which, to some extent, were reminiscent of the old Volunteer days, or evenings, to be precise, of the early nineties. At that time, issued with a Martini rifle, a scarlet tunic—that possibly had smartened the inflated breast of a gallant marine, and bore a stain here and there of "cold tea"—a redolent kersey, characteristic of a glorious sunset which was refaced with buff fearnaught, sighing for the sponge and pipeclay, and also various oddments comprising a homogeneous collection of equipment, we sallied forth as "Saturday night soldiers" in the defence of hearth and home, but obstensibly to become marksmen. Speculations woven of a bright and near future were often nipped in the bud, for experience is a hard school, and we soon learned that no matter how smart we appeared on parade, or how we polished the exterior surface of our rifles, or, when at the ranges, laid an aim like a Wallingford, and exploited theory like an Ommundsen, our marksmanship was sadly at fault if we neglected to keep the barrels of our rifles in the in the highest degree of perfection.

Barrel neglect, I am convinced, may be held responsible for over fifty per cent of the failures generally attributed to other sources, and strange to say, it is not always the novice that figures upon the platform of criticism. The top sawyers may often catechise their conduct, but their error may not have been careless neglect but rather fear of interfering with a matter of routine which had been remarkably successful. I know a man who, when he is enjoying a generous phase of success, is loth to use anything but a smear of petroleum jelly to clean his barrel for fear he may disturb the peculiarities—if existent—of the barrel grooves which suit the particular brand of ammunition he uses. This fellow is abominably superstitious, but his superstition has more than once accentuated and expedited an early disaster. Systematic cleaning is essential, but the methods adopted must be thorough and without injury to the lands or grooves of the barrel.

We are mainly concerned with the care of the barrel of the small-bore weapon or miniature rifle when talking shooting matters in the pages of *The Rifleman*, but a hint or so in reference to its larger brother, the .303 calibre, may also arrest attention. "Cleanliness is next to highest possibleness," is a maxim to be strongly impressed upon the novice and expert alike, and it is one of the potential factors of match-winning. I quite suspect that some of my match-winning friends will pass on to the next article with the remark: "Same old yarn, 'How to clean a rifle barrel.'" Well, if it is the same old, old story, it loses nothing in the telling.

Many men when taking up the absorbing pastime of miniature rifle shooting have an idea that because the cartridge is so small there either can be no fouling or so little as to be a negligible quantity. Now experience, if they insist upon learning in its school, will very soon undeceive them. So it becomes patent to all that efficient barrel cleaning, and a caution to be always on the lookout for corrosion or leading, are among the earliest lessons to be learned if the man desires to enjoy the privilege of consistent accuracy for the period he is able to see to shoot and to hold the rifle with steadiness. Whether the cartridge be small or large, the products of the combustion of smokeless or "lesmok" powders and of the fulminate of the primer are intensely acid, and if the fouling is left on the steel of the barrel grooves for even a short time it starts to corrode and eat into the metal. Once this destructive agent has begun its work it is very difficult to stop it, and even when the spots of corrosion are so small as to be almost invisible when viewing the interior of the barrel with a reflector, they present a roughened surface that gradually gathers up portions of lead into a number of patches which may alter the zero very considerably from shot to shot until having "grown" to the extent of small lumps of the maximum size are then blown out. Again, a very bad pit in the rifling often lets the gases that drive the bullet escape past it, causing a waste of energy, further eroding of the barrel, and a tendency to make the bullet travel erratically. Rifle barrels are uncanny things and often behave in the most vexing manner. I have known some to satisfy the most discriminate shot, yet from their appearance they were candidates for the dispersal dump, while on the other hand some whose appearance passes an ordinary examination—a tiny spot here and there near the breech end, and those invisible without the aid of a reflector—will send up key-holed hits on the target at 25 yards. However, it is only reasonable to expect that a corroded barrel is bound to wear out much more quickly than one which has retained its highly polished surface, yet it is possible that if only pitted at the breech end it will retain certain features which will enable it to group satisfactorily, provided that there is twelve inches or so of barrel at the muzzle end in a good condition.

Of course, with a pitted barrel in which the perpetual action of corrosion is going on from day to day there appears no other alternative but to have the weapon "Parkerifled" or rebarrelled if consistency is desired. "Parkerrifling" was not possible with the old service rifle—anyhow, I have never heard of a firm of experts attempting the job and declaring it satisfactory—and as a new barrel cost anything in the neighborhood of a couple of

(*Continued on page* 15)

REVOLVER TEAM

Mr. K. T. Frederick

Mr. A. P. Lane

M. Eng. E. Kelly

Dr. H. A. Bayles

Lt. L. Harant

Dr. J. H. Snook
(*Alternate*).

1920
OLYMPIC
PISTOL TEAM
U S

OFFICERS

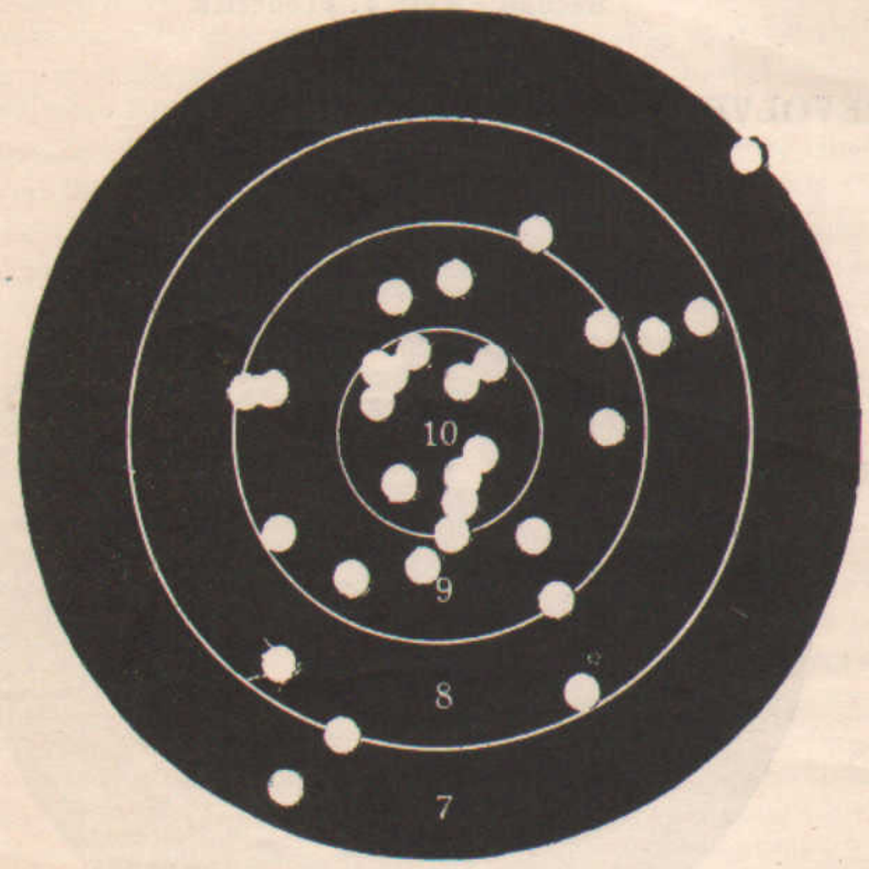
Team Captain:
Dr. R. H. Sayre

Team Coach:
Maj. O. F. Snyder

Team Adjutant:
Mr. J. A. Baker, Jr.

THE above team was selected by competitive tryouts, at the Marine Corps Range, Quantico, Va., June 21-23; to represent the United States in the Pistol Matches to be held at Antwerp, Belgium. It will be noted that the "Honor Positions"—Mr. K. T. Frederick, First place, score 91–92–89 equal 272, and Mr. A. P. Lane, Second place, score 90–88–91 equal 269—were made with COLT ARMY SPECIAL REVOLVERS, calibre .38, and that these honors were won from among 100 competitors—the pick of the experts—America's finest.

Again COLT Leads



Composite group of Mr. Frederick's target, which won First Place in the finals—30 shots at 30 meters on the International Target.

COLT'S PATENT FIRE ARMS MFG. CO.

HARTFORD, CONNECTICUT

Manufacturers of

Colt's Revolvers
Colt's (Browning) Automatic Machine Guns.
Colt's Automatic Pistols.
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THE PROVEN BEST BY ANY TEST.

SHOOTING NEWS AND COMMENT

WHAT it means to winter in the Alaskan interior and to spend the ice-bound months in a country where big game abounds, is told by Wright Wenrich of Juneau in a letter to *Arms and the Man.*

We had hoped to winter a hundred miles up the Taku river where bears of both species, moose and goats, are known to be plentiful, and some sheep to be found (says Mr. Wenrich). But, alas for the hopes of mice and men, delayed engine supply shipments held us back a month. Then the Taku river froze solid two weeks earlier than the oldest timers had record of. Had we been one day later, we would not have been able to enter the river. At it was, we ascended about six miles and built a cabin there.

The first day we were in the river we saw four bears a half mile away on a sand bar, but we did not go after them. Frequently we saw tracks of bear in groups of from two to five going up river. They are always going up in autumn, you know; for they are seeking winter quarters.

Once we saw where two had broken into a beaver house. The pond around the house was frozen over then. Blood stains on the snow indicated the success of their enterprise. But we were too busy preparing a cabin for the winter to hunt bear then.

When we first landed, moose tracks were fairly abundant, but they, too, migrated to higher ground. As a result, we were a whole month without fresh meat other than grouse, ptarmigan, and ducks. The Mallard ducks remained in certain open creeks until near December.

We certainly earned the first moose we secured. I had been following a cold trail for two days before I struck real fresh tracks. Then a blinding snowstorm came on and I was forced to return, for I could not see to shoot accurately twenty-five yards.

The following morning we both went out. I took up the old, almost obliterated trail, while my partner cut across to their possible bedding ground. By two o'clock in the afternoon I struck the fresh tracks and found my partner was following them. I went to camp. He did not return that night.

In the morning I set out with a liberal lunch to find him. I met him within a mile of camp. He had overtaken the moose near dark the previous night and killed two. But as he was several miles from camp, and the travelling *very* difficult—snow nearly two feet deep, but the brush too thick for snowshoes—he had "siwashed" it under a spruce tree. He thought the lunch I had would be only a "teaser," since he had not eaten a bite since the previous morning, and proceeded to camp. But as he had not cut the moose up, nor hung them out of the way of wolves and other predatory animals, I continued to the kill. I, too, reached there about dark, and was forced to accept the hospitality of a friendly spruce for the night. But I had the lunch I had brought supplemented with T-bone steaks from a fat moose.

A few days later we took dogs, with toboggan for the soft snow and sled for the river, and went after the meat. The moose had been killed on a plateau in a mountain pass. We first loaded the meat on the toboggan and hauled it a few miles; then packed it on our backs up a half mile of forty-five degree slope; then hauled it on the toboggan to the brow of an incline so steep that we could only ascend it by hanging on to the underbrush. We slid it down here and then loaded it onto the sled at the bottom and hauled it to camp. We were seven days getting the meat out and considered it worth one dollar per pound.

Later on we killed two more big fat moose about twenty-five miles or more up river. Some of this we hauled twenty miles and gave away rather than leave one pound to waste in the woods. During one week I saw six moose which I could have killed at distances ranging from ten feet to one hundred yards. And the same week I saw fresh tracks of two sets of three moose each which I could have trailed down and killed in the deep snow.

Almost constant snow or rain had prevented us getting very far from our main camp, which was located around twelve miles below the International boundary line. But in December I managed to get ten miles up the Tulsequeh river, which enters the Taku seven miles above the boundary. I pitched my tent there and started trailing three moose that had passed during the night. They went straight down river to within a half mile of the confluence of that stream with the Taku, then turned up the Taku. Before the journey, or race, was half completed, a rain set in and my snow shoes weighed as many pounds as they should have weighed ounces.

I camped that night in a cabin we had built in the spring. Fortunately, I had left some supplies and two pair of blankets there; for the rain continued, almost without intermission, for two weeks.

The second day I started up the Taku, thinking the moose might not have gone far and I could head them. About a mile from camp I heard a shot, very close, and thought it must be one of two acquaintances whom I knew to be camped, also storm bound, a few miles up-stream. I turned in that direction and rounded a point of timber to face a leveled rifle, pointing straight at me, in the hands of an Indian. The distance about one hundred yards. Another Indian stood close by.

When I called out to him, he dropped his gun, came forward, introduced himself and the other Indian as his son, and gave me as warm a welcome and handclasp as I ever experienced. I really believe that he had taken me for a bear or moose and was on the point of pulling the trigger when I called. Owing to the extremely wet weather, some bear were out, and they knew it. The boy accounted for the first shot by saying they were shooting at a mark. "We shoot a little every day, so when we see something we don't miss it," he said. A practical custom for riflemen, whether his story was true or not.

They took me to their tent and invited me in, but not to eat: for they were right down to hard-tack and tea. Their dogs staggered when they walked. These Indians too, were stormbound and unable to hunt successfully in snow six feet deep, but so soft that snowshoeing was next to impossible.

I was on a limited variety, if not short rations; for I had taken most of my provisions above. The Tulsequeh was opening up and I could wait to get back there. But I helped them out with a few square meals; gave them some cohoe salmon which I had previously secured from open water spawning beds; and a little ammunition, of which they were running short. They had boated their winter supplies up in the early fall and were trying to reach them. But the Taku ice was not safe above. The rain made travel on the bank impossible.

A few days later there was a little crust and they went six miles further up. But before going they presented me with a pair of moccasins. A few days after they had gone the son returned with about twenty pounds of boned meat on his back.

Few Indians, or white men either, would have gone back on their trail, wading without boots in ice water or going over thin, rotten ice where to break through meant an ice cold bath, if not drowning, every step dangerous, just to make a donation to an almost total stranger because he was out of meat and short of provisions.

They also wished one of their nearly starved dogs onto me with the guarranty: "If he no work, you shoot him All right." He proved, after a months feeding, to be as good as represented.

As soon as the weather tightened up, I went to the lower camp for more supplies. My partner came with me, but expected to return, as soon as I was settled, to look after the traps we had out at the lower camp. By this time the weather was around twenty-five below and we traveled to my tent, ten miles up the Tulsequeh, and few miles beyond, easily.

We pitched a second tent—my tent was all but buried in snow, and when dug out it and contents were nearly solid with ice; then went out for moose and killed two. We hauled them right in, but none too soon for another rainy spell set in which lasted another two weeks.

Before it ceased, we were running short of "store grub." In fact, there was but four pounds of flour left, so I started, about eight o'clock one morning, for the Tulsequeh cabin, where we had stored sufficient supplies to last one man a month and a half.

There was a little crust that morning, and I had hoped the weather would continue colder, but within an hour it began raining and continued to do so the entire day.

The river was running bank full, and over. The ice, upon which we had sledded up our supplies, was covered or carried away. I was forced in many places to the bluffs, often so steep that I could hardly climb with snowshoes, and not at all in the deep snow without them. My two dogs were packed with blankets—the ropes were too heavy to pack—gum boots and dog-feed. They, too, were handicapped by the soft snow, and often I was compelled to break trail up a particularly steep bluff; then return and help the dogs up, one at a time. They certainly were game too. It is at times like those one appreciates his canine servants and friends.

About half way to the mouth of the Tulsequeh, I saw a big bull moose wallowing in the snow, feeding on willow and alder buds. We could not use him where he was. I doubted then whether we could get the meat out we had killed. Certainly not if the rain continued; for we had no good boat, and we considered the river too treacherous to risk a moose hide canoe. To run into a snag or rock and capsize in that ice cold water meant almost sure death.

But I conceived the idea of driving this moose to the mouth of the stream, where we could use him. I knew my leader would run moose, and put a chain on him; but I did not know about the Indian dog, so I let him run loose. I herded the moose along for a few hundred yards, but the snow was too soft and deep. He made a stand under a spruce tree where the snow was much shallower, and prepared to fight for his life.

I would have given a good sum of money to have had my camera and bright sunlight that day. As we approached to within thirty or forty feet of him, he faced us and began tramping the snow down hard with his feet, this to enable him to have a firm footing. Hornless, he was, but the raw spots still showed on each side of his head where antlers recently had been. The coarse hair on his neck and back

stood straight up. Saliva ran from his mouth. He made no sound, but his eyes flashed fire. He showed no fear. He could not escape by running so he would fight.

As we came still nearer, the loose dog rushed him. And, had the dog not been protected by the blankets in the pack on his back, the moose surely would have killed him. However, had the dog not been so encumbered, he might have escaped the tromping the moose gave him. Holding the second dog in leash I rushed up, waving my rifle, still in its case, and whooping like an Indian on the war-path, trying to distract his attention from the dog he had down. I was within ten or fifteen feet of him before he accorded me the attention I requested, and then he attempted familiarities which led me, for a moment, to think I might have rushed in where an angel might fear to tread. I did not want to kill him. That would have been a shame. But I took backwater, or back-snow, to speak truthfully, nor did I do it leisurely. He did not follow me far however; just a few jumps, and then returned to his tree, where his footing was more secure. With some difficulty I persuaded the loose dog to follow me—he was not injured in the least—and we continued our journey.

After nine hours on snowshoes, I arrived at the cabin. I had traveled about ten miles across country. It would have been a few miles further if I had followed the river bank.

When I took off my snowshoes, I stepped, in the dark, down into nearly two feet of water over the cabin floor. The ice had jammed in the river and the water was backed up so that it covered the entire valley. But as the snow was much deeper than the water, one could not see it. The stove was afloat, or rather, the wooden blocks under it. All the fire-wood was wet, except a few sticks on top, and they were damp. The bottom of the bunks were barely out of water.

My first move was to light a half dozen candles to take the chill off the air. Although warm enough to rain, the air in a cabin almost buried in snow and half full of ice water seems cold to a fatigued man. I raised the stove out of water by driving stakes. Then with liberal applications of coal oil, built a fire and kept it going, with frequent further applications of John D's Best, until I had cooked a meal. My blankets were soaked with rain and snow water, and I sat up the greater part of the night getting them half dry before I retired to a spruce-bough mattressed couch.

On the fourth day after arriving at this camp the weather became colder, a hard crust formed and I was able to haul a toboggan load of provisions back to our upper camp, twelve miles, in three hours.

But the weather was so undependable that we decided to move back to our lower camp and main grub cache. It was near the first of March by this time and we dared not remain longer without more provisions and a boat. There was considerable fur there too. As it happened the weather settled down and a hard crust formed on which we could have traveled to our original destination with ease.

During the month of March we trapped close in to our main camp, for we feared to venture far after experiencing two weeks of rain during each winter month.

Had we reached our goal a hundred miles up river we should have secured sheep. And we should have been able to kill at least a dozen bears during the month of May. One of my friends who was with us last spring on the lower Taku, was further up during the summer and reported four times as many bears up there as below. Indians and others corroborate his statement. As it was we only secured seven bears: three grizzlies, one brown, and three blacks.

The first bear I saw this spring was a little black, high up on the mountain side, too far for me to shoot with a 30–30, and the snow too deep to climb up to him. On the third of May I was going along the foot of the mountain to look at some otter traps when I sighted three bears on a snow slide. By the time I had worked around to the windward and above them, they were feeding in the little open patches among the shrubbery on the mountain side.

When I had approached within shooting distance, about two hundred and fifty yards, the three bears were lying down, so close together that I fired at the bunch, the shots taking no noticeable effect except to start them toward higher ground, which was also toward me.

I confined most of my attention to the largest. I thought the others yearlings. I downed the big one twice, and he was so slow in recovering from the second shot that I thought him mortally wounded. By that time one of the others had passed from view. I shot the other once, and it dropped, not to move again. Later I found a second bullet in it, which must have been one of the first three fired.

But two shells were left in my magazine. I had but nine with me in the beginning, for I was not hunting bear that day. I could have shot again at the big fellow, but wanted to save these two shots for "finishers" at close quarters. I was in thick brush and did not know what foolish notions some of them might take; I did not know that one was stone dead.

When I climbed down to where they had been, the big bear was gone. I never did find him. It was too near dark even to skin the

one I had killed. It proved to be a female that had evidently suckled young. The dry hide measured seven feet six inches. I should like to have measured the skin of the one that "got away."

When we started for Juneau, about May tenth, we stopped for a few days to hunt bear near the mouth of the river and to visit a rancher there. From the house-top, about ten o'clock one morning, my partner sighted, with field glasses, three bears a mile or more away at the foot of the mountain.

Although they had disappeared in the timber we went over. As we could not locate them when we reached there and it would be futile to hunt for them in the heavy brush, we established ourselves at strategic points to wait until they came out again in the evening to feed.

My partner took a position a few hundred yards up on the mountain side, but I took mine in the flats at the base of a point which they would probably pass, should they come that way. And, as the sun was warm, and the mosquitoes not too numerous, I went to sleep. I figured they would make sufficient sound to awaken me if they surprised themselves by stumbling over me.

Some five hours later my partner returned and whispered that they had all come out near where they had gone in and were making fairly rapid progress down against the wind and that the largest one was very suspicious. He kept sniffing in our direction. He would go ahead for a few yards, sometimes fifty yards, then return rapidly over his trail and look in our direction.

We both set out, side by side, but at a certain place, likely for them to spread out and feed, we separated. I had gone but a hundred yards or so when I heard a "woof woof" in the brush ahead. In a moment or two, a bear appeared a hundred and fifty yards away on the mountain side. I fired three shots in quick succession. Two bullets took vital effect through one shoulder and behind another. One shot penetrated the heart. Yet the bear passed from view in the thick brush. Looking considerably higher up, I saw another bear and fired two rapid shots. My partner fired one. The bear let loose all holds and slid down the mountain into brush impenetrable to the eye. The third one I never saw.

When I climbed up to look for the second bear, I could not find it. Nor did I see blood stains. My partner climbed up to where we had seen the first one I shot stop and were within six feet of it before he could locate it in the thick brush. It was stone dead; nor were there any blood stains where it had traveled with two mortal wounds.

This one proved to be a two-year old female of the brown species. The other I hit was about the same size. My partner swore the one that escaped was fully four times as large as the one killed. Because it was so very much larger he took these two-year olds for cubs.

My partner also lost a grizzly after severely wounding it. We both passed up several shots at distances from 400 to 600 yards because we knew our guns too short of range and shocking power to be effective at that distance when one can only get in one or two shots before the bear reaches cover. I was using a 30–30, and he a 303, good general utility guns. But when one is after the larger members of the brown or grizzly species, guns with greater shocking power are more effective. This is not a conclusion of one bear hunt, but of many.

There were goats in the mountains near us, but we had plenty of noose meat, so did not bother them. I am past hunting anything for sport except possibly a bear. I do not even kill them when the fur is not prime, unless one should be robbing my cache.

If I have given the winter weather on the lower Taku a "black eye," I might say the Indians, as well as the whites, pronounce this past winter one of the most rainy they have known. The higher one ascends this swift flowing stream, the more sunshine one may depend on encountering. Nor do I know of any place in Alaska where one may expect to find big game in greater variety within as limited an area. So little hunting has been done that the country is comparatively virgin. But if I ever again spend another winter on the lower Taku it will be at mining and not hunting.

"TAKE CARE OF THAT BARREL"

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pounds, far more care was taken of weapons than is noticeable in .22 rifle clubs today. I do not think that it was the high cost and inconvenience which one was put to in having a weapon rendered efficient which promoted greater care being taken, but rather would I attribute it to greater keenness and enthusiasm to excel being manifested by the full-charge rifle shot. I am loath to admit this, but it is, nevertheless, a fact, and it is to the early training and the systematic and gradual stages of his instruction and also the disciplinary measures which are enforced, becoming later a habit, which promote a healthy regard for the weapon—the medium of his youthful enterprise. "Take care of that barrel" may

not have been a threat heralding corporal punishment, although I though so twenty-five years ago. Today I know it was a piece of good advice, as there was also salt in everything the old fellow told to his little school of feather-brained youngsters.

"It's an ill wind," etc., a phrase often quoted when a canopy of vicissitudes for a moment depresses one but to be dispelled the instant we know material advantages may accrue, may be applicable in the club routine of today. The increased charges for ammunition and rifles and the scarcity of both may have the the effect of causing the club member to exercise greater care with the weapon in his possession. The useless "blazing away" of ammunition in any old rifle may become a practice of the past. Reliable ammunition is appealing today to be fired through a highly polished barrel and a similar act of courtesy is requested in return. During the forthcoming session on the open heath-lands enthusiasts will shoot true and often and their belts will be burdened with scalps. But only will this coveted ideal be obtained if they have taken the advice of the old armourer—"Take care of that barrel!"

During my itinerary of the past twelve months I have had many opportunities of viewing some of the country's most up-to-date ranges, and upon those which are used for sport alone, have observed that where pavilions, huts or shelters of various descriptions have been provided for the comfort and convenience of the members, very seldom has the enterprise of the executive gone so far as to provide apparata of any shape or form where members may clean the barrel of a rifle. We know that the rod used in cleaning the barrel must be passed into the orifice at the muzzle end of 99 per cent of the rifles in use on English small-bore ranges today, and that it is only when cleaning the barrel of a bolt action weapon the orthodox method may be adopted, so that is why, perhaps, the floor of the pavilion, or the ground in its immediate neighborhood, is deemed to provide sufficient support for the rifle when it is being cleaned. Any old fence and any old way will not do for the club member in the future who will expect facilities in the shape of a stoutly constructed rack or bench so that he may place his weapon in an almost horizontal position—the muzzle being slightly lower than the breech end—while manipulating the rod. The rear of the pavilion has often appeared to me to be an excellent position for two or three narrow benches, and one does not require to be a highly skilled joiner before being able to build one.

Now a good stout cleaning rod is absolutely essential—the pull-through and brush is tabooed by every man who has the slightest regard for his barrel. Some rods are sold which are covered with wood or celluloid and are quite good, but you must remember that these being rather thin are quite liable to bend. Personally, I always use a stout highly-polished steel rod with a revolving handle, which I am sure can do no damage to the rifling if employed carefully. Many riflemen of my acquaintance use home-made rods upon which they have brazed the spindle part of an old bicycle pedal with its ball-bearing attachment. It is often refreshing to see such ingenuity, but the cost of an efficient rod is a mere trifle, besides one will last a life-time. Jagged ends are a "washout," so select your rod with a plain screw end which will accommodate brushes, mops, and loops.

To clean the barrel of a Service rifle you would first place the rifle in the bench rest and take out the bolt. Then pass your rod through your rod guide, screw on your brush, which you have previously smeared with cleansing oil, and place guide in the bolt-way before pushing the brush through the barrel. The brush is passed several times through the barrel before taking off, thus effectively cleaning the grooves of fouling. Subsequently a loop end is screwed on to the rod to which you have threaded a piece of flannelette, 4 x 2 inches, and the barrel treated similarly, the flannelette being replaced by other pieces until the barrel is quite clean. The barrel is then treated to a piece of oiled flannelette or an oiled mop; rangoon, or even the genuine Russian petroleum, are quite good for this purpose, but are by no means to be considered as cleansing oils, Young's .303 being, in my opinion, the best of the latter category.

The .22 barrel, however, should be treated in just such a careful manner, if good grouping is desired. If you are having a day on the range, shooting continuously with perhaps a break of a couple of hours for lunch, it should only be necessary to thoroughly clean your barrel immediately at the close of the day's programme, while as soon as you have adjourned for the break, say at mid-day, it would be advisable to brush out and wipe thoroughly dry, especially in warm weather, otherwise the fouling remaining in the barrel after the last shot has been fired will harden. A good method is as follows: Pass a stout highly-polished steel rod through the barrel and then thread a piece of slightly oiled flannelette, 4 x 1¾ inches, through a loop-end which you place in the chamber. Now screw on rod and draw the whole through the barrel to clear out the deposit. Then replace the loop by a stiff bristle brush, also oiled with .303 cleanser which should be passed through the barrel several times, being careful to avoid bearing on the inner surface of the barrel at the muzzle end, and also to allow the brush to follow the path of the grooves. Now you have somewhat "shaken up" the sooty deposit and have cleaned the under angle of the lands, but you have left a smear of such in the barrel, so you

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must resort to the loop once again. The rod should again be passed down the barrel and the loop threaded with a piece of flannelette as before and drawn through the barrel. This will require some power, but it is worth the while, but at first make sure that you have slightly oiled the flannelette with cleanser and have doubled it before threading. Some riflemen use half the width of flannelette and as soon as they have drawn it clear of the breach, close the lever, and pass the rod through several times before withdrawing. Possibly this method is effectual, but I cannot recommend it as I have not tried it. Finally, when the barrel is quite clean the bore should be oiled with a mop or a smaller piece of flannelette, using armourer's jelly.

A leaded barrel will upset the calculations of every marksman, good, bad, or indifferent. Your favorite weapon has been grouping in a most charming manner and you have been, and still consider yourself, in top-hole form, when a rotten seven, or even a five, appears to disfigure your target. Of course it may have been a bad round, so don't attribute the cause of your misfortune to a leaded barrel, but if your shots continue to spread, striking the target at various angles which may be observed by elliptical shot-holes, you may be confident that your barrel is leaded. Now there are various methods of clearing the grooves of these patches of lead, besides treating the bore to guaze or emery powder, and the best in my opinion is by a liquid solvent. This application means a little trouble, but it is worth the while. There are tablets sold known as "P.B.'s," which are dissolved in water; the liquid is poured into the barrel, which has been corked up at one end, and this, if allowed to remain a short time, will dissolve the lead fouling completely. Pastes containing mercury are also retailed, and if one of these is smeared upon a mop in a liberal manner so that the bore may be treated to a fairly thick coating, the lead and the mercury amalgamate if allowed to remain for twenty-four hours. To clear the barrel pieces of dry flannelette should be pulled through the barrel, when it may be observed that the lead that has been adhering to the grooves of the rifling has come away with it.

Some riflemen object to the use of mercurial pastes because it has been suggested that they are injurious to the polish of the barrel. These men opine that after the barrel has been so treated the polish has suffered to such an extent that confidence in that weapon cannot be restored and that a recrudescence of leading will be imminent. Possibly this is a point in favor of the liquid solvent which they say has not such a marked effect upon the polish of their barrels—so zealously guarded. However, the high polish which is observed in the rifle when it leaves the maker's may be somewhat restored by the following judicious treatment: Take a piece of flannelette 1 x 4 inches and work some vaseline well into it. Now spread jeweller's rouge well over both sides and thread through the loop. Pass the rod down the barrel, and place the loop in the chamber, and screw in the rod. Draw rod until flannelette is clear of the breech, and close lever. Now work rod backwards and forwards, making sure that the rod is revolving freely on its handle so that the flannelette follows the rifling of the barrel each time. This operation may be carried on for fifteen minutes with advantage, and if carried out carefully an excellently polished barrel should be the result.

Because I have not mentioned that the plug and circular patch may be used instead of the loop to removes the barrel deposits, do not think that it is tabooed in company with the old-fashioned jag. I have simply described what I can recommend, but if some riflemen prefer the plug and the patch there is one piece of advice which I may offer—"do not stint." Patches are cheap compared with the cost of a new barrel.

Before leaving the subject of cleaning, a word or so about the striker-way will not be amiss. After a blow-back, a certain portion of fulminate fouling will often be found in the striker-way and around the collar of the striker, so take down the action if you can, or get some one to do it for you, and clean out with cleansing oil, wipe dry, and oil with rangoon.

Some riflemen have used graphite with the object of keeping up the polish of their barrels, and even go so far as to make a fetish of it especially when shooting full-charge. They have used graphite as a polisher and the bullet to apply the graphite and rub it in, or at least, on. Others have applied it to the bore with rod and pad, while others have used it as one of the ingredients of a polishing powder or paste. Graphite in itself is not of the best of polishers, but may be a very good softener of

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Loads And Re-loads

In this column, conducted by Capt. 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.

HAVE just about finished re-stocking a Springfield myself and I want to ask you what would be the best rear sight to have put on this rifle to use principally as a big game rifle. Please do not tell me Lyman No. 48 micrometer for I do not like peep sights. The Springfield rear sight is all right, of course, as it is, but I do not care to have on a sight for game work that will permit one to sight up to 2,700 yards. The battle sight as I understand it is practically set for 530 yards. In other words I want a rear sight that is open and can be tried out and tested for various ranges from 100 up to 500 yards or less and will be accurately adjusted and dependable. With the Springfield rear sight one is obliged to use the peep sight when he wishes to shoot at 100 to 300 or 400 yards. Also in re-stocking the Springfield would you advise using a band around the barrel in addition to the two screws which hold the barrel to the stock?

E.L.W., St. Paul, Minn.

Answer: The best way I know of solving your problem is to take the leaf off of the movable base of the rear sight and then to screw on to this movable base an open rear sight. There are many open rear sights on the market that can be used for this purpose. I would suggest that perhaps the open rear sight, now regularly furnished on the 250–3000 Savage bolt action rifle, might do very well. It has a screw adjustment to zero it. The front sight, of course, can be made any height to correspond with this rear sight. You will notice that with the rear sight so placed you can still operate the regular wind-gauge in the usual manner.

I would certainly advise a band around the barrel in addition to the two large screws on the Springfield, this more particularly for the protection of the stock, etc., to keep it from splitting.

I AM IN quest of information as to how to cut down a Krag rifle so as to be suitable for a sporting rifle.

I suppose that you have been asked for this information before and know the best way to go about the task, I want to make the rifle lighter and also shorter, I have the tools to cut the barrel and so forth with but do not want to start about the task blindfolded and without directions as to how much to cut off, because I might spoil the rifle altogether.

I would therefor be pleased to receive directions from you if you are able to furnish them. I inclose stamps herein for return postage and will be glad to pay for your trouble, hoping to hear from you in the near future.

H.J.L., Superior, Wis.

Answer: I have remodelled a number of these rifles, some being simply slightly changed to adapt them to hunting with the least expense, and others being completely restocked and turned into excellent sporting arms. I presume that you wish to just slightly remodel yours so as to make it more suitable for hunting.

I would advise that you first cut off the forestock at a point about 3 inches in front of the lower band, and round up the stock like a carbine stock. This will considerably lighten the stock. Next, remove the hand-guard and rear sight, and get a piece of walnut and make a new hand guard, with solid top without recess for the rear sight. Discard the military rear sight. Obtain from the Lyman Gun Sight Corporation, Middlefield, Conn., a Lyman No. 33 receiver sight for the Krag rifle and have a mechanic fit it to the receiver of the rifle.

The barrel can be cut off to any length down to 22 inches. I would not advise going below that, and think that 26 inches is the best length. It should be cut off squarely and well. You lose about 10 feet muzzle velocity for every inch you cut off the barrel, which is really immaterial. You practically lose nothing in accuracy, except that the error of aim with a short sight base will be a little greater than with the longer sight base. Practically with a receiver sight, this amounts to nothing. Then you have the problem of fitting a new base to which to attach the new front sight. I think that the best base you can get would be one of the fixed front sight bases for the Springfield rifle.

The butt-stock of the Krag rifle is mighty good for hunting just as it is. I would not advise altering it, and particularly I would not advise making the small of the stock (grip) any thinner. A hunting stock should be good and strong. The grip is the weakest point of the stock, and bolt action rifles have no tangs above and below the grip to strengthen it. Leave the grip as it is. You might take a sharp cold chisel and turn up a few burrs on the butt-plate to keep it from slipping on the shoulder. If you are good at checking stocks, the grip of the stock and the forearm might be checked, and you also might check a sighting rib on top of the new hand guard.

I would advise that you have a first-class mechanic cut off the barrel, making it truly square, and fit the new front sight base.

PLEASE advise composition of a good lubricant for inside lubrication of lead bullets for the Krag, 1899.

J. L. P., La Grange, Ill.

Answer: Relative to lubricant for lead bullets used in the Krag rifle:

The main thing is to get a lubricant which is not acid, and which is of the proper consistency. It is better not to use animal greases or oils as they tend to turn acid. The lubricant should be softer for use in winter than for summer. You can easily mix it to the required hardness by using more or less of the thick element of the compound.

I would suggest that any of the following mixtures will be found perfectly satisfactory:

1. Ozocerite (a mineral wax) with sufficient vaseline, mobilubricant, or any other mineral grease to soften it to the thickness desired.

2. Vaseline with sufficient parafine to thicken it as desired.

If you wish powdered graphite may be incorporated in small quantities with any of the above, but if used it is necessary to keep continually stirring the mixture to keep the graphite from precipitating. If you use the grease cold in a pump then of course you have to stir the grease only until it cools.

I HAVE a Springfield rifle. Star guage card shows it to have a groove diameter of .308 inch bore diameter .3002. I wish to use this almost exclusively for hunting and want to use the 220-grain Krag bullet. The gun is 1903 model, chambered for 1906 cartridge, therefore a cartridge loaded with the 220-grain bullet will not enter the chamber. Would you advise having the lands removed just in front of the chamber say for about 3–8-inch of just enough to allow the bullet to enter. It seems to me there would be very little escape of gas past such a bullet, less than with a 220-grain bullet that was made small enough to enter the bore of gun without removing lands; and how about accuracy?

B. R. S., Omak, Wash.

Answer: I have your letter of the 7th instant relative to alteration in the chamber of the Springfield rifle to make it take the Krag 220-grain bullet.

I certainly would not make this change under any consideration. First you would probably ruin the rifle. Next, the rifle would no longer shoot the pointed bullets intended for it well. Third, it will be only a question of a few years when you will find it very difficult to get 220-grain bullets *made specially for the Krag rifle.*

Have you investigated the fact that you can obtain from the Winchester Repeating Arms Company, ammunition ready loaded, .30 cal. Model 1906, with 220-grain soft point bullet. Also you can obtain these 220-soft grain point bullets for the .30, Model 1906 cartridge from the Winchester Repeating Arms Company, and reload your own ammunition. In ordering such bullets you must specify that they must be for the .30, Model 1906 cartridge, as bullets of 220-grain weight for the Krag cartridge, or for the .30, Model 1903 cartridge, will not fit your rifle.

A better bullet still, and a more modern and accurate one is the 220 grain soft-point bullet made by the Western Cartridge Company for the .30, Model 1906 cartridge. This bullet is jacketed with gilding metal (copper), does not cause metallic fouling, gives less friction and wear to the bore, and is jacketed well up to the point so that it does not fly to pieces on large bones. I have been using this bullet lately with fine success.

I think you will find it a fact that the ammunition companies are paying very little attention to the accuracy of manufacture of their 220-grain Krag bullets, but the riflemen of the country compel them, by their demands, to keep up to scratch on the bullets for the .30, Model 1906 cartridge.

The 220-grain bullets for the Model 1906 cartridge are practically the same as those for the Krag cartridge, except that they are made slightly smaller in diameter in that portion which projects from the shell, the projecting portion riding on the top of the lands, and tending to straighten the bullet up and make it more accurate.

I AM AT work remodelling my star gauged Springfield into a sporter. I am planning on holding the forearm on with a band with a lug on it as I do not wish to have my barrel temper drawn in brazing it.

Can you give me the names and addresses of several gunsmiths who can make this band for me? About how much ought it to cost?

I am five feet four and have not yet got my growth. Would you suggest my building my stock according to dimensions in your article in July 1st *Arms and the Man* Will you kindly reply to this as soon as possible as

I am now working on my rifle. I am going to use a No. 103 rear sight. What is the best gold bead front sight; Lyman, Marble, King or Sheard? What is the difference between the new and the old Lyman No. 103? How long has the new been on the market?

Where can I get a butt-plate such as you recommend in your article "The American Rifle" in July 1st *Arms and the Man*? What will it cost?

Are there any action or mechanism changes that you would suggest in remodelling a Springfield?

P. B. S., Portland, Maine.

Answer: I do not know exactly where you can get barrel bands for securing the forearm and sling swivels to the barrel, but you might try any of the following gun makers.

Fred Adolph, Genoa, New York.

R. C. King, 155 N. Main st., Los Angeles, Calif.

A. M. Pachmayr, 718 Maple ave., Los Angeles, Calif.

Barney Worthen, care of Ellery Arms Co., San Francisco, Calif.

These men might also be able to provide you with butt-plates, but I am inclined to think that the supply of barrel bands and butt-plates is so limited that most of the gun-makers want to reserve their small supply for rifles they remodel themselves. Perhaps you could get one of them to make these up to order on the bench, but this would be a rather expensive job. I have been trying to get someone to make up a lot of these accessories for sale, but so far without success.

Have you thought of securing the forearm to the barrel by a regular military sling swivel band? I think this is the best and strongest way, but many men do not like the looks of it. I have both a Krag and a Springfield rifle remodelled in this way. The Krag barrel band appears better than the larger Springfield band, as the latter is larger and includes the handguard under it.

As you are rather short it is hard to tell you just what length of stock you will require. If you have shot much your own experience is the best guide. Generally speaking for a man of your size, if you have long arms and your shoulders are not very broad a stock of 13¼ inches ought to be about right. Many short men with short arms and broad shoulders require a very short stock, and the regular length of the Springfield military stock is about right.

The first Lyman sight for the cocking piece did not have micrometer adjustments for elevation and windage. There have been a large number of different types of Lyman sights fitted to the cocking piece of Springfield rifles, but about a year ago the Lyman Gun Sight Corporation standardized on the present type of No. 103 rear sight.

If you have trouble in getting a butt-plate, I would suggest that the best one that I know of that you can surely obtain is the Winchester, checked steel, shotgun butt-plate. It is a very good butt-plate, but has no trap in it. The regular military butt-plate can be heated and bent on a slight curve, bending out the toe, and then very slightly narrowed, and makes a very good butt-plate.

Do not make any changes in the mechanism of the rifle. It is just right as it is. However, if the bolt works hard you might cover it with a very fine valve grinding compound, work it for about five minutes, and then thoroughly wipe off all the compound, getting it all off with gasoline, and then oil the bolt. This will smooth the working surfaces up, and make the bolt work much more smoothly. But this must not be overdone. Only enough to polish the surfaces, and not enough to cut the metal away.

If I were you I would proceed rather slowly. Why not just slightly remodel the military stock at present until you find out just what you want, and the correct dimensions, before you go to the expense of making a new stock?

THESE Clubs have been admitted to membership in the National Rifle Association of America

Ohio:

General Edwin F. Glenn Post 108, Veterans of Foreign Wars Rifle Club, Chillicothe, Ohio. Sec'y, O. C. Cavins, 163 Scioto st., Chillicothe; Pres., T. M. Cahill; Vice-Pres., Charles T. Coughlin; Treas. ,A. O. Long; Exec. Officer, W. E. Richards. 10 members.

Jeromeville Civilian Rifle Club. Sec'y, Walter H. Carl, Jeromeville; Pres., H. E. Sigler; Vice-Pres., C. H. Kiser; Treas., Leo Franks; Exec. Officer, R. C. Plank. 25 members.

Mansfield Veterans of Foreign Wars, Gerke Post 356, Rifle Club. Sec'y-Treas., Charles Kuhn, 77 S. Diamond st., Mansfield; Pres., Ed. L. Knarr; Vice-Pres., Charles Wheatcraft; Exec. Officer, Glen Pore. 14 members.

Massillon Rifle Club. Sec'y, W. P. Miller, The Massillon Rolling Mill Co., Massillon; Pres., F. W. Siffert; Vice-Pres., Dr. J. A. Carnes; Treas., J. G. Lester; Exec. Officer, C. P. Weeks. 29 members.

Pennsylvania:

Bellefonte Rifle Club. Sec'y-Treas., J. B. Wagner, Allegheny st., Bellefonte; Pres., Dr. E. S. Maloy; Vice-Pres., J. O. Heverly; Exec. Officer, Roy H. Grove. 13 members.

Capt. Allyn Post 22, Veterans of Foreign Wars Rifle Club, Philadelphia; Sec'y, Thomas C. Lewis, 2829 Frankford ave., Phila.; Pres., Cyril D. Sayer; Vice-Pres., Wm. J. Ryan; Treas., Paul S. Krause; Exec. Officer, Edward J. McKenzie. 10 members.

Modern Rifle Club, Erie, Pa. Sec'y, Roy A. Loder, care of Modern Tool Co., Erie; Pres., A. G. Nicholson; Vice-Pres., W. Swanson; Treas., Lwo Lewis; Exec. Officer, Fred Bolkey. 21 members.

Orbisonia Rifle Club. Sec'y, J. A. Cowan, Orbisonia, Pa.; Pres., A. L. Carothers; Vice-Pres., R. C. Stevens; Treas., H. N. Gutshall; Exec. Officer, F. M. Butler. 30 members.

Wm. P. Roche Post No. 21, American Legion Rifle Club, Philadelphia. Sec'y, John D. Ward, 7242 Woodland ave., Phila.; Pres., Theo. D. Ward; Vice-Pres., Richard Wells; Treas., John F. Clayton,; Exec. Officer Frank M. Lydon. 13 members.

Rhode Island:

Capt. Thos. W. Connell Post 45, Veterans of Foreign Wars Rifle Club, Providence. Sec'y, James L. Simpson, 84 Verndale ave., Providence; Pres., Henry A. White; Vice-Pres., H. H. Borden; Treas., J. J. Boyle; Exec. Officer, Leroy W. Armstrong. 15 members.

Virginia:

Gloucester Rifle Club. Sec'y, Wallace Williams, Gloucester; Pres., J. Alvin Fleming; Vice-Pres., Jeff Procter; Treas., Bernard Fleming; Exec. Officer, P. S. Wallace. 14 members.

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some other polishing materials. There is considerable difference in using graphite in a new barrel, which has already a highly polished surface, and in using it in an old barrel full of pits, often of considerable depth. It is practically certain that in some cases graphite improves the shooting of an old barrel, but the difficulty of securing even application from shot to shot in ordinary range practice is very considerable. Certainly the success of graphite applied to the barrel is not very striking, and is, in many cases, not apparent. It can hardly be applied to the waxed bullet now in universal usuage, and the gain as an efficient lubricant for the clean, dry bullet is open to question. When the Rhen Westphalian brand of ammunition was the most popular brand in use quite a large number of small-bore shots were accustomed to dip their bullets in graphite before placing them in the chamber. I tried the dodge, but I found that the breech end of my barrel gave out before the barrel generally suffered as regards its polish.

Although it is generally conceded that leading is not nearly so prevalent as it was some years ago its cause does not pass without a modicum of interest to those who have a few moments to study the vagaries of the miniature cartridge bullet. Hard fouling, the deposit which was to be found in the barrel after the cartridge was fired, in that period has now been superseded by a soft, greasy black deposit, and yet we observe that the troublesome complaint of leading still exists, so those people who were wont to insist that the hard fouling at the breech end of the barrel was the principal factor causing a collection of lead now assert that the cause should be attributed to the intensely acid gas from the ignited fulminate.

A note has already appeared in reference to the many preparations for removing lead fouling which contain metallic mercury, amides of organic acids, or ammonium compounds in solutions of potassium hydrate or ammonia, and while these are, no doubt, more or less effective, we have still the man to consider who is sceptical regarding his barrel being leaded and who suggests that his trouble is nothing more than hard fouling.

Well, the remedy in this case is the careful manipulation of the scratch brush, which is made of fine brass wire. In the application of the scratch brush considerable care is neccessary, and it is essential that the rifle should be firmly held in a vice for this purpose especially if the weapon has a Martini action, which practically decides that it must be cleaned from the muzzle end. The brush should be pushed into the barrel, then screw on the rod. The brush should then be worked backwards and forwards over the part from which the foreign matter is to be removed, taking care not to let the brush come out of the end of the barrel. However, should this accidently happen, do not endeavor to pull the brush back again into the barrel, but unscrew it from the rod and push it in again from the muzzle end. By so doing the wires of the brush are preserved in the correct inclination, like the teeth of a shark, and its life as an effective fouling remover considerably prolonged.

Beyond the brief reference to the pitted barrel in the beginning of this article, we must assume that the causes of leading are somewhat obscure. Lead, we are told, has no affinity for iron. Even in a molten state lead will not adhere to iron. Lead plugs are used for lapping barrels, and the mere mechanical friction of lead against iron does not cause leading. It is suggested that some barrels lead up more quickly than others, while certain brands of ammunition also accentuate it. The number of rounds which may be fired to produce an appreciable amount of leading

varies, so it may appear that from these variations we can infer what causes leading.

In the first place there are differences in the quality of the barrel and that some metals are predisposed to lead up more than others. Other things being equal, the harder the metal the greater is the number of rounds that may be fired before an appreciable deposit of lead may be observed by demonstration. Consequently the harder the metal used in making the barrel, the longer will be the period of accuracy, assuming, of course, that the barrels are equal in other respects, the interior surfaces as smooth and well polished, of exactly the same dimension, and identical in every way but hardness of metal. For many other reasons the harder barrel is superior, but in this particular its life is prolonged because it contributes less in wear and tear. After firing, say 5,000 rounds, the softer barrel may have enlarged just in front of the cartridge chamber to more than double the difference between its then diameter and the original diameter, compared with the difference measurable in the harder barrel. Naturally the point at which the enlargement is greatest is that at which the strain is greatest, in fact, where most of the job is done. Now what happens is this.

The base of the bullet being enlarged by the force of the explosion until its diameter is slightly larger than that of the external diameter of the cartridge case, is then compressed as it passes through the lead (or cone) to the diameter of the barrel plus the depth of the grooves and is again compressed by the lands as it enters the rifled portion of the barrel. The friction of the comparatively soft metal of which the bullet is composed against the relatively hard steel would not alone account for the enlargement of the barrel. Heat generated by the explosive is an important factor, and another factor closely allied is time in which the bullet is enlarged, compressed and forced into the rifling. In the chamber of the heavy calibred weapon the eating away

of the superheated metal leaves an altered surface; this surface has lost the polish that was left by the expert's finishing tools on the cold metal. Although the roughness is too fine to be detected by the unaided eye, it is made up of rugosities which catch and hold particles of lead when the next bullet passes. We cannot compare the passing of a bullet to the act of driving a lead plug through the barrel by mechanical means, because the former is much faster and the pressure much greater. The effect is similar to the result of pressing a piece of lead against a piece of rusted steel with a heavy blow from a ten-ton steam hammer.

It is generally understood that lead has an affinity for lead and that it is possible to weld lead to lead autogeneously, without heat, by moderate pressure, so that a particle of lead held in the barrel by the rugosities of its surface will collect more from a bullet momentarily in contact with it, while in the same way, it is generally conceded, the bullet may remove some of the particles of leading from the barrel. Other particles, however, take the place of those removed, deposited there in the same way, and as these increase ultimately both in number and in size, leading becomes appreciable as a metallic fouling to destroy the accuracy of the bullet passing through the barrel.

Another point which research has determined is variability in the amount and the cause of the differences in quantity of fouling. It is conceded that some ammunition leads up a barrel more quickly than others and that the least likely to lead is the short black-powder cartridge—when fired in a rifle that has been chambered for it—because this ammunition gives a lower velocity to the bullet, the powder burns more slowly, and the work done in getting the bullet from the cartridge into the rifling takes a longer time. There is also less heat, and the heat is distributed over a greater length of barrel. On the other hand with smokeless powders the bullet attains a higher velocity in the barrel at a point nearer the breech end than it does when black powders are used. This is equally applicable with the "long" or "long rifle" ammunition. Another point to be observed is that black powder leaves a residue in the barrel and which residue deposited on the surface, protects the surface to some extent from the corrosive gases and residue produced by the fulminate used for igniting the charge. Now, if this particular residue is forced out of the barrel by the bullet of the next round fired, and if the bullets are properly lubricated and the rifle carefully cleaned after use, the appearance of leading may be appreciably delayed until the barrel is enlarged by fair wear in the process of firing many thousands of rounds in competition and practice. High explosives, to which class smokeless powders belong, leave little or no residue, and the fouling generally observed at the breech end of the barrel is probably due to the fulminate referred to above. These priming compounds mostly contain mercury, which has a direct chemical action upon some oxides of iron, while it also forms an amalgam with lead. The assumption, therefore, is that a residual compound of which mercury in any form is a component will suffice to unite steel and lead, or at any rate, induce lead to adhere to steel.

Thus the results of research practically define the causes of leading as (1) mechanical adhesion due to a roughened surface of the barrel; (2) the result of chemical action due to the gases of the explosives used producing a similar roughness, and (3) a flux which allows lead to fasten itself to a steel surface.

The theory of the expert appears incontrovertible, while it also seems that leading cannot be prevented, only delayed by "taking care of that barrel." Rust must not on any account be tolerated, still less, pitting from rust. Scrupulous cleanliness will prolong the life of a barrel, the barrel by which we hope to obtain consistent accuracy.—"Carton" in *The Rifleman.*

WANTS AND FOR SALE

Each subscriber to ARMS AND THE MAN is entitled when his subscription is paid up for one year, to one free insertion of a half-inch want ad in this column.

All he needs to do is to send in the advertisement for insertion at the same time calling attention to the date when his subscription was paid.

OLD-TIME and modern firearms bought, sold and exchanged. Kentucky flint-lock rifles, old-time pistols, revolvers, guns, swords, powder horns, etc. Lists free. Stephen Van Rensselaer, 805 Madison Avenue, New York City.

FOR SALE—Pre-war Springfield, star guaged, military stock, remodeled into sporting carbine form, Lyman No. 48 rear and gold bead front sights, action and barrel refinished. This arm has fine balance and at once makes a superior sporting weapon without further costs. Owned by crank and in crank condition. Used only a little on private range. $65.00 cash, postal money order. R. D. Talmage, East Hampton, N. Y.

WANTED—Ideal bullet molds for bullets 308278 and 308280. Molds must be in good condition. Sam Squibb, 507 Ridgewood ave., Brooklyn, N. Y.

FOR SALE—Savage .22 long rifle, N.R.A.; special selected barrel just back from the Savage factory; stock cut down to closely resemble Newton rifle; pistol grip and forearm neatly checked; hand polished, dull oil finish; photograph will be mailed to bona fide prospects. Price $45.00. Frank D. Elwell, care of The Delco, Dayton, Ohio.

WANTED—Single action Colt Army revolver, chambered for .38 Long Colt and .38 S. & W. special cartridges. A. G. Kellenberger, 504 Calif. Bldg., Tacoma, Wash.

FOR SALE OR TRADE—New N.R.A. Savage bolt action rifle, sling and two magazines, $26.00 or trade for .45 Colt auto., .38 Colt auto., pocket model, or what have you? E. L. Kayser, care of Harned & von Maur, Davenport, Iowa.

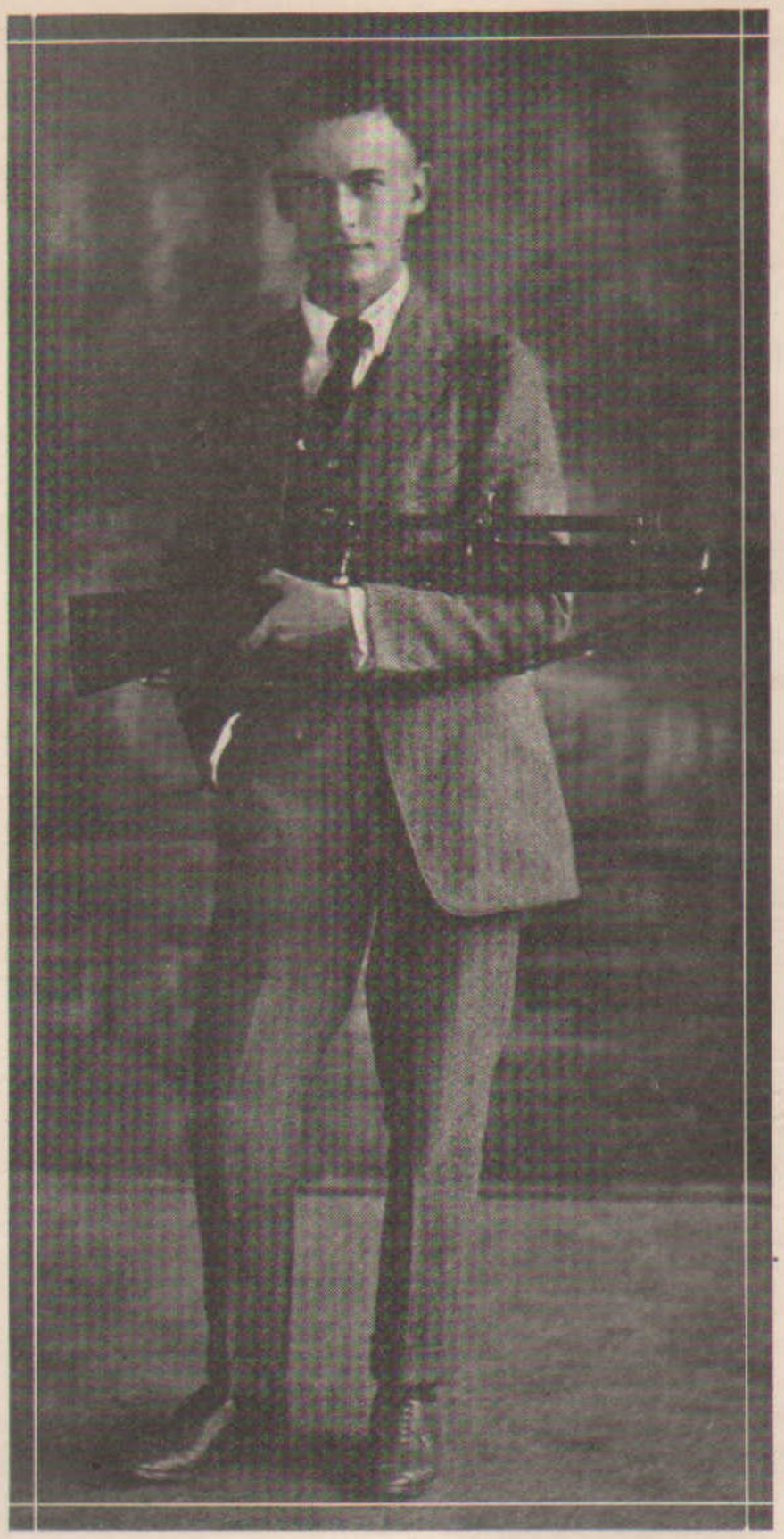
WANTED—.45 Colt government model 1911 automatic pistol, also cartridges, belt, holster. Must be in perfect condition. S. E. Morris, care of G. L. Howland, Afton, Wyo.

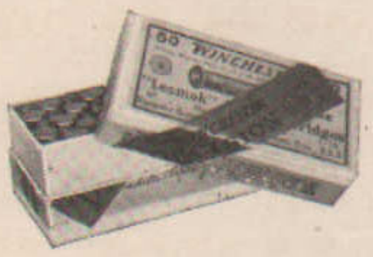
FOR SALE—1 single shot 8 mm Remington rifle, A No. 1 condition, with sling bayonet and cartridge belt. $5.00 for complete outfit. W. W. Naramore, care of Bridgeport Coach Lace Co., Bridgeport, Conn.

WANTED—Full set of Ideal reloading tools for Springfield .30, '06. If you have a set of these for sale do not fail to write. R. T. Morrison, Lower Southampton, N. B.

FOR SALE—300 special target cartridges .30, '06, F. A. and U. S. Cartridge Co., $5.25 per 100 or exchange for offers. Kessler, 1105 Maple st., Des Moines, Iowa.

FOR SALE—Star gauged Krag A-1 condition, sporting stock, recoil pad, 280 rounds ammunition. $30.00. H. H. Holmes, 49 Lockwood st., Ashtabula, Ohio.





Lad of 19 makes "Possible" at 100 yards with a .22 Rifle

VIRGIL W. RICHARD, 19 year old son of Capt. W. H. Richard, won the 100-yard match in the American Small-Bore League Championship matches at Tenafly, N. J., July 5, by the sensational achievement of scoring a "possible." Shooting experts declare their belief that this is the first "possible" made with a small-bore rifle on the 100-yard range in outdoor competition in this country. Richard scored his triumph against a field of 222 entries.

Richard's remarkable shooting also won for him the grand aggregate for the three days of shooting at the matches, with a mark of 290 x 300, giving him the special cup for the leading shooter of the matches. He scored 100 in the 100-yard prone, 97 in the 75-yard sitting, and 93 in the 50-yard standing events.

In making these winnings Richard used the new Winchester .22 Bolt Action Box Magazine Rifle and Winchester Precision Ammunition—the combination used by the Quinnipiac Rifle and Revolver Club team when it won the National Rifle Association Indoor championship for 1920 with the record-breaking score of 9991 x 10000.

Mrs. Frank Winch won the special shoot for women with a score of 87 x 100. It was her first shooting in a match event. She also used a Winchester .22 Bolt Action Rifle.

Winchester Precision Ammunition and a limited number of these new Winchester .22 Caliber Bolt Action Box Magazine Rifles will be available for the use of the shooters at Camp Perry National Matches this month. The combination for the closest groups in .22 caliber shooting.

WINCHESTER

WORLD STANDARD GUNS AND AMMUNITION

—And Now at Glasgow, Scotland

OUR REPRESENTATIVE in Great Britain reports that the great success of U. S. Ammunition at the Ham and Petersham competition has been followed by an equally spectacular success at the Glasgow, Scotland, meeting of the miniature rifle clubs.

Following is a list of the events won by users of U. S. Ammunition. In the majority of cases the cartridge used was the U. S. .22 N. R. A. Long Rifle Lesmok Cartridge. This is becoming generally known as the all-range cartridge for it functions with the same unequalled accuracy at ranges of 25, 50, 100 or 200 yards.

International Match—Scotland vs. England.

Won by: G. Crockart, Arbroath.
Used: U. S. at 50 and 100 yards.
Score: Top (both teams).

Grand Aggregate Gold Medal and Trophy.

Won by: D. MacDonald, Renfield R. C.
Used: U. S. Ammunition throughout the whole of his 10 targets at 25, 50 and 100 yards.
Score: 966 ex possible 1,000, which included two rapid targets.

Bell Challenge Trophy (25, 50 and 100 yards).

Used: U. S. Ammunition at 100 yards.
2nd, 3rd, 5th and 6th places U. S. at 50 and 100 yards.

S.M.R.C. Life Membership (30 shots at 25 yards)

2nd Won by: D. MacDonald, Renfield R. C.
Used: U. S. Ammunition.
Score: 296 ex 300.

S.M.R.C. Challenge Cup (25, 50 and 100 yards).

2nd, 3rd, 5th, 6th and 7th men used U. S. either all through or at 50 and 100 yards.

Longstaff Challenge Cup—The Championship. (25, 50, 100 yards and 50 yards rapid).

2nd Won by: D. Mac Donald, Renfield R. C.
Used: U. S. Ammunition throughout.
Score: 385 ex 400.
3rd and 5th winners used U. S. at 50 and 100 yards.

B.S.A. Competition (25 and 50 yards).

Won by: D. MacDonald, Renfield R. C.
Used: U. S. Ammunition.
Score: 197 ex 200.
Tied 2nd, 3rd, 4th, 5th, 6th, 7th and 8th. All men used U. S. at 50 yards.

Explosives Trades Competition Ltd. (50 and 100 yards.)

1st man used U. S. at 100 yards.
2nd man used U. S. at both ranges.

S.M.R.C. 25 yards (Re-Entry Competition).

Tied 1st with a possible of 100.

S.M.R.C. 50 yards (Re-Entry Competition).

1st and 2nd places both possibles of 100.

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