

If this name is on the barrel you can buy with confidence.



PURITY FLOUR

More Bread and Better Bread

Target Tips and Hunting Hints by Alfred P. Lane



A New Questions and Answers Department of Interest to Shooters

Readers are reminded that this column is open to questions which should be sent to me in care of the Sporting Editor, and to discussions by the readers on anything connected with hunting or target shooting.—A. P. L.

A Mooted Question Answered

In this issue an inquirer who has given much thought to shooting matters, asks how a bullet fired straight up in the air, acts on its upward and downward journeys. Our readers may differ as to whether "H. W. S." is right in his contention, but it goes without saying that he is entitled to a vote of thanks for drawing the most interesting reply from Mr. Lane.—The Editor.

H. W. S., Camden, Maine.

Recently you answered an inquiry relating to a bullet fired straight up in the air. Permit me to point out an error in your answer. In the first place you say the atmosphere slows up the bullet on its way up and also down. This is, of course, true to some extent, but may be disregarded, inasmuch as the bullet is not deformed and also because the resistance of the air to the passage of the bullet is equal both on its upward and downward journey.

The fact is, the bullet would strike as hard after its fall as if the muzzle of the rifle were pointed to the ground, or in other words, its velocity would be the same after the fall as when it left the muzzle of the rifle and may be thus explained. The powder charge imparts to the bullet a certain amount of energy. This manifests itself as motion. The weight of the projectile multiplied by its speed constitutes what we call momentum. This force tends to carry forward the body possessing it until overcome by a superior resistance.

This resistance is furnished by gravity which slows down the bullet and eventually stops it. Then gravity, still acting on the bullet, starts it back toward the earth at the rate of 16 ft. per second. But gravity, being a constant force, will cause the bullet to accelerate its speed. At the end of the first second, the bullet will be travelling downward at the rate of 16 ft. s. from a standstill. With the constant pull of gravity, which is equally strong whether a body is in motion or not, the rate of acceleration is thus: 1st second, 16 ft.; 2nd, 32 ft.; 3rd, 48 ft.; 4th, 64 ft.; 5th, 80 ft.; 6th, 96 ft.; 7th, 112 ft.; 8th, 128 ft.; 9th, 144 ft.; 10th, 160 ft. This speed is imparted by gravity and restores to the bullet the momentum which was previously overcome by it.

The energy imparted by the powder was sufficient to drive the bullet a certain distance (which can easily be figured out) against the force of gravity. This energy having been first overcome and later restored, it follows that the bullet would return with the same velocity with which it started. And it would show the same striking power or penetration as if fired down from the rifle with an infinitesimal difference which could not be measured. The speed of falling objects is the same regardless of difference of height. A difference of density, bulk or mass would make one fall faster than another owing to the resistance of the atmosphere, although in a vacuum a bullet and a thistle-down would fall with equal velocity.

The resistance of the air need not be taken into consideration in the matter under discussion, as there is no deforming of the bullet and although it aids gravity in stopping the bullet going up and tends to protect it going down, the effect would be extremely small, and hardly to be measured.

Something of the velocity of falling bodies may be gathered from newspaper reports of aeroplane darts having gone through a man lengthwise in the war. It is doubtful if they fell from a greater height than would be attained by a modern high power rifle. The same reasoning shows the futility of firing at aeroplanes at a great altitude as the bullets have little striking force to inflict damage.

Ans. Your reasoning is entirely logical and would prove your case except that the resistance of the atmosphere to the flight of the bullet is no such small thing as you assume. Take a concrete example for instance: A well-known and popular high power rifle cartridge has a muzzle velocity of 2,000 ft. per second. When fired in a horizontal direction at the end of but 200 yds., its velocity is 1,200 ft. per second, a loss of nearly one-third, due entirely to the work necessary to overcome the resistance of the air. Gravity has nothing to do with this loss, as the bullet was fired horizontally and a diagram showing the direction of action of the force of gravity in relation to the direction of the bullet's travel will prove this to you. If it were not for the air resistance, the bullet would still be travelling 2,000 ft. per second at the end of 200 yds., or at any longer distance until its path were finally deflected sufficiently by gravity so that it struck the ground. Thus, air resistance slows down the bullet if it is fired vertically to the same extent, the amount of loss in velocity due to gravity being represented by the potential energy of the bullet, which again turns into kinetic energy upon its descent. Owing to this first loss, that is, of air resistance, the bullet does not go anywhere nearly as high as it would if it were not for the air resistance, and consequently its potential energy, if there were no air resistance, on its return flight would not be enough to equal its initial velocity by the time it reached the ground. Also, the air acts in an opposite direction on the return of the bullet and it has a greater effect in proportion to its way down because the bullet is travelling back first.

Inherited Tastes

Robert Borden might have been a farmer like his father, or a teacher, or he might have been a teacher, like his father, for the elder Borden was both, and he actually did enter the teaching profession only to abandon it at a convenient opportunity to take up the study of law. The fact is that he had inherited from his father a strong taste for intellectual pursuits. The prosaic life of the farmer did not appeal to him, even though the Annapolis valley is as the garden of the gods and farming there is as attractive as fertility of soil and beauty of landscape can make it. He went to school at Acadia, Villa Academy, Horton, and then to the University of Toronto, where he was an apt and diligent student, displaying even then a disposition to master thoroughly each subject which entered his mind, and a keenness of disposition had characterized him in later life. As Prime Minister he gives to each of the multitudinous matters with which he is called upon to deal, an attention so searching as to give him a complete mastery of all its details. This has been demonstrated a thousand times and at various times in the Civil Service. Deputations of well-meaning persons have found it out to their sorrow when coming before the Government with half-baked proposals.

Called to the Bar in 1878

Having learned all there was at Horton, Robert Borden became a teacher. He went to New Jersey and served several years there as a teacher in the Glenwood Institute. His capabilities were, however, not for long. It is probable that he intended from youth to study law in his native province and country. In any event that was his purpose during the latter part of his stay at the Glenwood Institute, and he finally returned back to Canada and taking up the study of law. He was called to the bar of Nova Scotia in 1878.

It may be said of Robert Borden as truly as it can be said of anybody that he has succeeded wherever he has tried. He has succeeded brilliantly and always by fair means. There is no record in print or memory of his having ever profited deliberately at another's expense, of his utilizing a question asked him in a very battle of his life, and they have been many. He has fought a clean, straightforward fight. He has been a Nova Scotia hero he ever thought of entering political life. While still a young man he was at the head of his profession. In his career at the bar he prospered, and yet he did more for his clients than for himself. It is recalled of him in those days that he refused a retainer from the Dominion Government in order to protect the interest of a much humbler client in a lawsuit which had been acted for the government. It would have brought him an imposing fee. He did this in the face of a somewhat empty and insistent demand from the then Prime Minister, Sir John Thompson. This incident reveals the character of the man and the principle that guides him to-day as it did then.

A Terrific Worker

R. L. Borden has always been a terrific worker. It was so when he studied law and later when he practiced it. After entering politics, he still more, after becoming Prime Minister, this tremendous capacity for work has been more and more in evidence. Whenever there has been work to be done, the Prime Minister has been doing it, and since the war began the amount of work an official character, work which could not be delegated, has called for almost incessant labor. In other words, Sir Robert Borden has been a terrific worker for Canada and the Empire that he ever did for himself. This is because he gives place to no living man in love of his country, a profound regard for the institutions, ideals and traditions which belong to the Canadian people in common with the rest of the great family of British nations. This love of country is deeply rooted in the Borden nature. It was this that brought R. L. Borden into the Conservative party in 1891 when the campaign for unrestricted reciprocity with the United States was launched by the Liberals. Unrestricted

Ans. Yes—I would suggest .45 O. F. S. St. Paul, Minn.

1. What is the penetration of the .44 Winchester rifle?

Ans. Nine 3/4 soft pine boards.

2. Is this rifle suitable for bear and deer?

Ans. I would recommend a more powerful rifle.

Alfred P. Lane

Sir Robert Borden

A Character Sketch

By PAUL E. BILKEY

Great events have, in all ages, produced strong men, or rather, perhaps it is more true to say that the latent strength of the individual has risen to the opportunity afforded by a great necessity. It is true, at all events, that in every world epoch of the past there have been developed individuals of human forces which have stood out and are remembered for their splendid achievements. The war which now rages over Europe has found such men. This war has been called the last stand of barbarism as exemplified by the military despotism of Prussia. Against that barbarism there have been arrayed elements that are proving and will prove to be resistant and all-conquering. Behind these elements and directing them, there are individuals, the great human forces that have risen up to ensure a final victory for progress in this tremendous struggle of the light against the dark.

Canada's Part
The part that the Dominion of Canada could play in a struggle such as this was probably determined by the friends of Britain. Undoubtedly by her enemies. That Canada has done so much more than was expected of her is due to the fact that there was in the Dominion when the need arose, a man of commanding strength and courage clothed with the ability and the determination to give the fullest expression of the deep desire of the Canadians to share in the struggle upon the issue of which depends the integrity of every British nation.

Sir Robert Borden was born in 1854 at Grand Pre, the little Acadian village which Longfellow has made immortal. The Borden homestead is still there, being occupied by Mrs. Eunice Borden, mother of the Prime Minister, until her death early in the present year. The Borden were United Empire Loyalists, and the strain is just as strong to-day in Sir Robert Borden as it was in his great grandfather who fled from the stream of New England Loyalists and settled in King's County in 1760.

Chosen Leader in 1901

When R. L. Borden was chosen leader in 1901, the Conservative Opposition was still suffering from the effects of the 1896 election. On the other side of the House was a government strongly entrenched itself in power with the aid of a docile and obedient party, overwhelmingly large. The new leader took what was a thankless and at times probably a disheartening task. He had to make bricks without straw and to fight against an opponent who had straw to burn and bricks to throw away. But he undertook the task and for ten years fought a patient, uphill battle against every influence, legitimate and otherwise that a powerful and not too impulsive government could bring to bear against him. He won, as he has always won, and strangely enough it was the same old issue of reciprocity that had brought him into the House. His presence at the head of affairs in Canada during the last fourteen months has meant more to Canada and more to the cause of civilization than can easily be measured at this close range. An idea of its importance may be gathered from what we know of the results achieved, what we know of the feeling in the Motherland, and from the admission of his political opponents that no other man could have equalled his work in crystallizing to the utmost force and effect, the will of the Canadian people.

A Career Unmarred

Sir Robert Borden's career as Prime Minister has been without mistakes. He has had to contend with issues of tremendous and far-reaching consequence. He has met them courageously, has dealt with them wisely, and when these issues have been determined and are gone into history his course will be seen to have been guided by the truest patriotism and the highest statesmanship. He has become more than Prime Minister. He is to-day the leader of the Canadian people. He has set himself to the performance of a task in which he acts and speaks for all Canadians. His presence at the head of affairs in Canada during the last fourteen months has meant more to Canada and more to the cause of civilization than can easily be measured at this close range. An idea of its importance may be gathered from what we know of the results achieved, what we know of the feeling in the Motherland, and from the admission of his political opponents that no other man could have equalled his work in crystallizing to the utmost force and effect, the will of the Canadian people.

It is not perhaps generally known that Sir Robert Borden for years before the outbreak of war, had been a close student of German conditions. The social, economic, political and military growth and aims of the German people has been known to him as fully as possible from omnivorous reading. His familiarity with the German language gave him a very wide and intimate knowledge of German literature, and when the German peril was approaching a critical stage he knew far better than most British statesmen what sort of an adversary the Empire would have to confront. He had sought to strengthen the sea power of Britain by a contribution of Canadian dreadnaughts and had failed. It is not necessary now to go into the circumstances of that blot on our history. But when the hour for which he would have prepared did come, he was found ready. He knew the Dominion. He knew that the refusal of 1912 was not a refusal by the Canadian people, and when war was imminent he offered in their name to send a contingent of Canadians across the seas. How well that offer gives place to an living man in love of his country, a profound regard for the institutions, ideals and traditions which belong to the Canadian people in common with the rest of the great family of British nations.

This love of country is deeply rooted in the Borden nature. It was this that brought R. L. Borden into the Conservative party in 1891 when the campaign for unrestricted reciprocity with the United States was launched by the Liberals. Unrestricted

The first offer of aid from overseas came from Canada. It reached the Imperial Government before the declaration of war. It answered the German prophecy that in a war against Britain the overseas Dominions need not be feared. So swift and forceful was Sir Robert Borden's action in this crisis that within a few weeks of the outbreak of hostilities there arrived in English waters a great grey fleet of giant ships bearing from the western hemisphere an



SIR ROBERT BORDEN

ed reciprocity had a look about it which was too un-British and too un-Canadian to suit him, and to preserve his patriotism he changed his party allegiance, which, as things have turned out since, was a good thing for Canada and a good thing for the Empire. Six years later he appeared as the Conservative candidate in Halifax. He was elected, and it is a curious and interesting fact that the campaign which was otherwise so disastrous to the Conservative party, brought into Parliament the man who was to be reborn and rehabilitate that party and to place it in a position of eminence and power which no political party had ever before enjoyed in Canada.

SHARP ATTACK REPULSED

Dangerous Condition Relieved Just in Time By "Fruit-a-tives"



MR. F. J. CAVEEN
632 Gerrard St. East, Toronto.
For two years, I was a victim of Acute Indigestion and Gas In The Stomach. It afterwards attacked my Heart, and I had pains all over the body, so I could hardly move around. I tried all kinds of medicines but none of them did me any good. At last, acting on the advice of a friend, I decided to try "Fruit-a-tives". I bought the first box last June, and now I am well, after using only three boxes. I recommend "Fruit-a-tives" to anyone suffering from Indigestion, no matter how acute. FRED J. CAVEEN.
Simple Indigestion often leads to Heart Attacks, Catarrh of the Stomach and constant distress of mind and body. If you are bothered with Constipation troubles you, take "Fruit-a-tives".
50c. a box, 6 for \$2.50, trial size, 25c. At all dealers or sent postpaid by Fruit-a-tives Limited, Ottawa.

Notice of Tender

SEALED TENDERS marked "TENDERS FOR WHARF INTERESTS PARISH OF CHATHAM" will be received at the Department of Public Works (Provincial) Fredericton, N. B., up to TUESDAY, November thirtieth, at twelve noon, for all the right, title and interest of the Province of New Brunswick in the Ferry Wharves situated in the Parish of Chatham in the County of Northumberland.
A certified cheque for 5 per cent. (five per cent.) of the amount of the tender must accompany each tender.
JOHN MORRISSEY,
Minister of Public Works.
Dated at Fredericton this Fifteenth day of October, 1915. 43-4

array division truly armed and equipped and trained.

The rest is recent and glorious history. It was a Canadian division that stopped the German rush toward Calais last spring and saved the situation for the Allies in the face of conditions which no army had ever before been called upon to meet. There is no need to tell the story again. It is written indelibly and the story of St. Julien, of Ypres and Passchendaele will never be forgotten.

Back of all this splendid achievement stands the figure of Canada's Prime Minister. He has been the guiding brain through all the months of preparation in Canada. In his hands have been the reins by which all efforts of the Dominion have been directed. And although he has done all this without a thought of personal advancement, there has come to him a very great reward, a place in history higher than any other Canadian has attained and a place in the hearts of the British people throughout the Empire. Nowhere has his work been more deeply appreciated than in the Motherland itself. His recent visit to Great Britain and to France marked the beginning of a new era in the relations of Great Britain and the first of overseas Dominions. He was received by the British people as a great statesman of the Empire. Given the freedom of the great city of London, honored by the King and consulted by the statesman of Britain, he was through all a Canadian, one who had done a great work and was there to find the means of making that work greater. So deeply had his achievement as the Canadian leader impressed the Imperial Government that he was invited to a seat at the Imperial council table, distinction never before shown to a prime minister from overseas. In this incident history was made, the first forward step being taken in that closer union of the British Imperial Family which the present great conflict is bringing about.

His Visit to the Front

Sir Robert gave his time and his thought largely to the welfare of the Canadians at the front, and particularly to those who lay wounded in the hospitals. At considerable personal risk he went to the battlefield and saw the men in the trenches. Scores of hospitals were visited by him, and for every wounded Canadian in these hospitals he had a cheery greeting and a friendly word. He has come back to Canada strong in the determination to see that nothing that Canada can do toward bringing the war to a successful issue, is left undone. He has brought back with him a message of confidence coupled with an appeal to every Canadian to do his part as fully as the men who are at the battlefield have done and are doing it. He knows that the answer will be an even stronger and greater effort than Canada has yet made. When the war is over and peace comes again, Canada will be able to look back thankfully and gratefully to the work of Sir Robert Borden at a time when the strongest Canadian was called for, and was there.

Canada in the Lead

The first offer of aid from overseas came from Canada. It reached the Imperial Government before the declaration of war. It answered the German prophecy that in a war against Britain the overseas Dominions need not be feared. So swift and forceful was Sir Robert Borden's action in this crisis that within a few weeks of the outbreak of hostilities there arrived in English waters a great grey fleet of giant ships bearing from the western hemisphere an

CASTORIA

For Infants and Children.
The Kind You Have Always Bought
Bears the Signature of *Chas. H. Fletcher*

Yesterday is Dead; Forget It—
Tomorrow does not exist; Don't Worry—
Today is Here; Use It!

WHY WAIT?

Yes, you INTEND to advertise. You fully appreciate the value of advertising. You have seen immense businesses built up by good advertising. But YOU intend to wait a little longer before you place that intended ad. in The Advocate. Certainly, you INTEND to advertise, but not until tomorrow, next month or perhaps until the war is over.

Friend, do you realize the people of Northumberland County are a prosperous people who are NOT going to wait until tomorrow, next month, or until the war is over before they BUY? And they will buy from the man they have faith in—the man who advertises in their trusted home paper, The Union Advocate. This paper covers Northumberland County thoroughly. It goes into the home and STAYS there.

Recently we decided to make The Advocate the leader of all papers in the County of Northumberland in the matter of circulation and second to none of any rural paper in the Maritime Provinces. We spared no expense to achieve this end.

So far as circulation is concerned, we have won out. There is not a corner in Northumberland County in which The Advocate does not circulate. As a matter of news—we lead, others follow. We give the biggest dollar's worth of news of any other paper in the county. We give the news first, while it is fresh. We receive weekly, letters, kind, thoughtful letters, commending us upon our work. Hundreds of new names have been added to our lists within the past two months. We expect these new subscribers will bring many more new ones.

Just think, Mr. Advertiser, what this enormous increase in our circulation means to you! You are not in business for your health—you are spending money in advertising for the purpose of getting increased business. As a business proposition, it is up to you to use the paper with the largest bona-fide paid up subscription list, and that paper in Northumberland County is

THE UNION ADVOCATE

Make up your mind TODAY, and get settled in a good position for the Christmas trade.

PROMPTNESS

That it pays to be prompt has been proven time and again by The Advocate Job Department, and proof of this can be seen by the following extract from a letter received from a patron in Rexton, N. B. The reader can judge as to whether he is a SATISFIED patron or not:

"Rexton, N. B., 8th Oct. 1915

The Union Advocate Office,
Newcastle, N. B.

Dear Sirs:—You are certainly the promptest people I ever tried for auction posters. I received the last order the very next day after sending you the order.

I had a rush on for auctions lately, and I may have some more before the winter. If so, you will get the work.

I am yours truly,

(Name withheld.)

This is one of many just such letters as are being received from time to time at this office, and they bear evidence that wherever a mail order customer of The Advocate is found, you can be sure he is a satisfied one. We endeavor to always give our best attention to orders received by mail, large or small, and while we cannot always be as prompt as in the case above referred to, owing to the heavy run of work always on hand, we make a point of delivering the finished work at our very earliest convenience, by the quickest and cheapest (to the customer) route.

You will find the stock suited to your needs, and a satisfactory cost price. Let us have your next order as a trial—WE GUARANTEE SATISFACTION.

THE UNION ADVOCATE

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