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MAY-JUNE 1965



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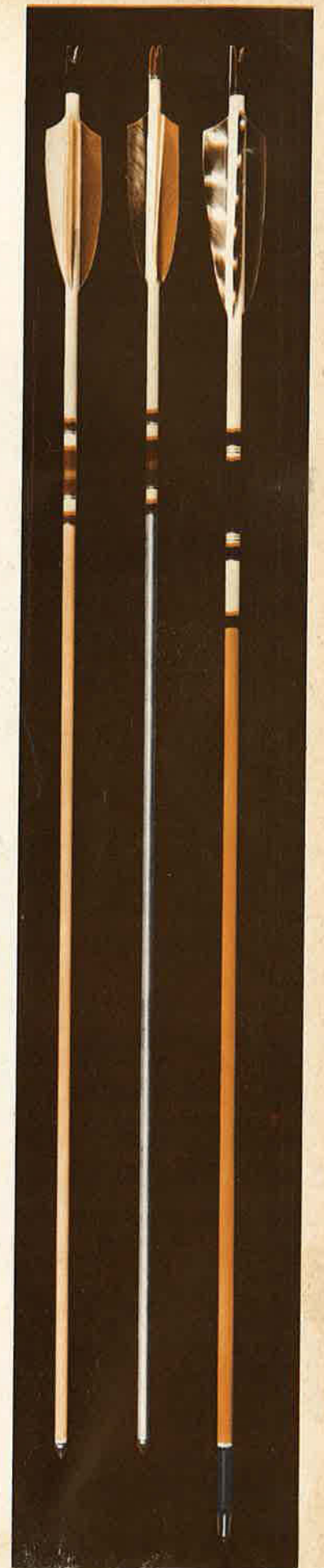
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3M MINNESOTA MINING & MANUFACTURING CO.

BOW & ARROW

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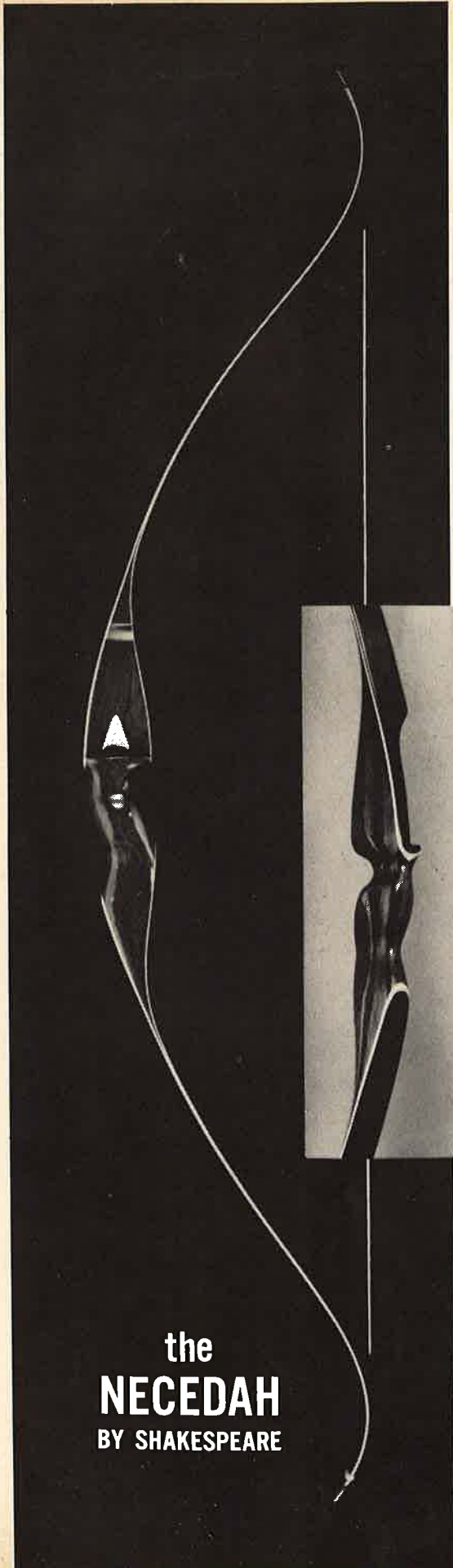
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ON THE COVER: Jim Dougherty draws United States Archery's Kentuckian hunting bow preparatory to launching an arrow at a wary coyote. Story of his bow test in Arizona begins on page 14. Photo by Ray Rich.

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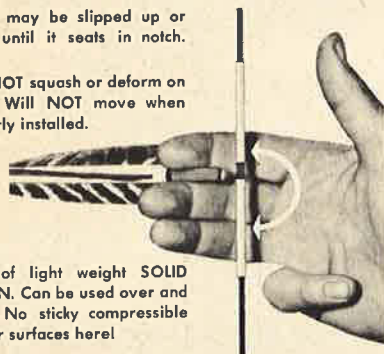
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Mail Pouch

FLIGHT SHOOTER

I have enjoyed all of your articles, but I have been especially interested in those on flight, as I am a flight shooter.

I am not taking part in flight competitively any more, as I am 72 years young and have a bum heart. Now I confine my endeavors to supplying the arrows that others can win with. I have had very good success. Have had forty years in archery. At the 1964 NAA National, my arrows won most everything.

My arrows set a new English record and recently, new men's and women's records for Australia were made with my arrows.

Puyallup, Washington
Riley Denton,

During the week of Christmas, it was my good fortune to witness a most extraordinary example of light shooting. The star performer was the past master of the game, Harry Drake, and the location was a dry lake bed on the California-Nevada border. The identical range marked out for the California State Flight championships held two months previous was used.

On the first occasion of note, Drake released fourteen arrows. Of these, seven were found at 750 yards, plus. Here are the actual yardages of the seven: 750; 755; 765; 778; 785; 790 and 802.

On Christmas Day and on another trial, of seven arrows shot, five were at 750 yards and up, with the best at 801 yards. The best arrow, in each case, was of forgewood. Length was 18 1/4 inches for each arrow. The first group of arrows weighed in at 131 grains, the second, 114 grains.

ON THE COVER: Jim hunting bow preparator bow test in Arizona be

BOW & ARROW is published Ave., Covina, Calif. Business Single copy price: 50 cents second class postage rates Sparta, Ill. COPYRIGHT magazine may be reproduced for manuscripts or photos OF ADDRESS: Give six x imprint from recent issue.

as forty-two constructed enter. It was ke's radically five pounds! eku, co, California

UNDER know if you address of the ssociation. I is an amateur ther archery

will be included in the 1968 Olympic Games. My dream is to be an Olympic archer.

Do you know if there are any age requirements? I'm 17 now and will be 18 in February. I'm also starting an archery club at Canoga Park High School, so I'll be looking forward to your *Club Call* column.

I am interested in archery and am frustrated because I get little practice. I am not nearly good enough for the Olympics yet, but I have over three years to get ready. I am perfectly willing to practice, practice, practice.

Bruce M. Morrison,
Canoga Park, California

GAR SHOOTER

I just finished reading "Bowfishing's Toughest Trophy" by John Heuston (B&A, Jan-Feb. 65). Being a Texan, I can't resist the opportunity to brag a little. Gar are quite common in this area and my friend, Earnest Hunter, and I land many of them during the spring and summer months each year. Since we seldom get a gar to lie on the surface, we shoot most of them while they are rolling by leading them a little. The arrow usually strikes them just after they go back under the water.

Here is a picture of Hunter and his biggest alligator gar of last season. It measured 7 1/3 feet and weighed in at 196 pounds. Earnest doesn't use a rod and reel, so it took him well over two hours to land the monster.

Benny R. Thomas,
Port Neches, Texas



CAMOUFLAGE

I thought your readers might be interested in my experience with the effectiveness of camouflage clothing and scent, while hunting whitetail deer.

I was on a stand about twenty-five yards from a trail, light cover in front of me, kneeling with my back to a ten-inch hemlock. I was dressed in the standard five-color two-piece camo outfit with camo cap. I had applied several drops of buck lure to my jacket a few days before.

While kneeling on the stand, I turned slowly to look at the area
(Continued on page 58)

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ARROW DROP

I read the article, *Medals For The Citation*, in the Jan-Feb. 65 issue. I was interested in the high anchor point information, so I went to our range and tried it.

From what I read, with the arrow nocked at eye level, thereby sighting down the arrow as with a rifle and sighting at the bull at a range of thirty yards, one should connect.

I use a 56-inch 44-pound recurve hunting with 27½-inch 125-grain field pointed arrows. I used a three-finger grip below the nocking point, and the arrow struck in the ground ten inches in front of the target. Could you advise me as to what is happening?

Dean L. Wheeler,
Mayville, New York

(It may be that you took Jim Dougherty a bit too literally. The arrow is going to start dropping from the line of sight trajectory from the instant it leaves the bow. If you sight exactly down the arrow, you always will have to aim above what you want to hit to compensate.)

(Any anchor point is a compromise between aiming down the ar-

TECH TALK

QUESTIONS & ANSWERS

row and giving the impression of rifle sighting, and holding below the eye level to aim over the arrow point to give much the same feel as shooting a pistol from the hip.

(The normal eye level sighting is done with the index finger drawing the arrow held at the cheek bone. This puts the arrow about two inches below the eye, but gives the effect of actually sighting down the arrow. You will find that, when you back up to thirty yards, the point of the arrow is superimposed directly on the target and that distances in excess of this are aimed over the target.)

(If you use the arrow above the

index finger, the "point on" position will be about ten yards and all other distances shot will have to be aimed with the arrow held above where you want it to hit.)

QUOTH THE RAVEN . . .

For a long time, I have been trying to locate a stave to be fashioned into my conception of a real Old English longbow about 6½ feet long, bending closer to a true circle than most and shooting a heavy arrow a full yard in length.

The bowyers I've written simply ignore this odd request and say that "longbows are not efficient." They then offer a spliced stave, backed and faced with fiberglass. Could you advise where I might buy a one-piece length of yew in length of 6½ feet or more?

Ron Raymond,
Bloomington, Indiana

(Since the laminated fiberglass bow came into being ten years back, the self bow has completely disappeared from the market. Even prior to that time, it was found that by taking two sections from a log, side by side, then splicing them, each limb would contain the same wood

(Continued on page 46)

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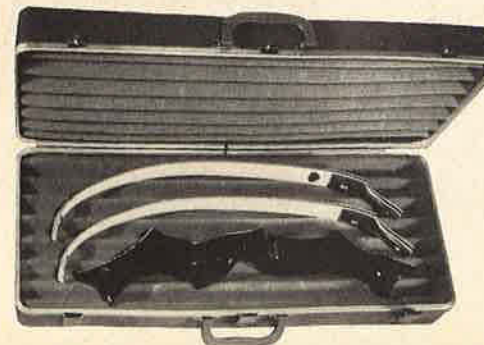
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HUNTING WITH
Doug Kittredge

Just like you tune up the ol' guitar before strumming the first note, you should prevent a possible sour chord by tuning up your hunting bow before twanging the bowstring at game.

As it comes from the maker, a bow is noisy, covered with beautiful glittering finish and needs adjustment to shoot the way you want it. Used as is, it is much like shooting a gun still in the crate.

The tune-up list is headed first by camouflage. Even if the colors used on your bow are dark in tone, the slick finish will reflect light like a mirror . . . often making the archer visible many hundreds of yards away and causing a guaranteed game spooking flash of light as the bow is shot.

Rubbing a little dirt or mud over the bow limbs will cut the shine temporarily, but it goes against the grain of most bow owners with prices the way they are today. A better solution is to equip the bow with a camouflage bowssock or to paint it with a dull, flat finish. There are two basic types of bowssocks. One is of stretchy knit material like a woman's stocking, which though fragile when used in snagging brush, has the advantage of being light weight and not causing the bow to lose speed; while the other is made of more durable cloth, is somewhat heavier in physical weight. Both kinds are simply slipped over the bow limbs, being careful to keep them loose so as not to restrict the bending of the limbs as the bow is drawn. If the bow is not used entirely for hunting and beauty is of importance, the bow sock is probably the best camouflage selection and can easily be removed at the close of the hunting season.

On the other hand, a permanent camouflage paint job does not affect shooting in the slightest, is there to stay — rain or shine — whether you hunt through brush or on open ground. Automotive primer is packaged in small spray cans at most well stocked paint stores. This can be had in grey or brown. Either one makes a good color for a hunting bow. The more artistic minded can add splotches of greens, yellows or dark browns put on with a brush, using the flat model railroad paints from your local hobby shop.

Next on the agenda is your hunting arrow rest. This serves two purposes: Quiets the arrow and cushions it when you get a bad release. The most popular hunting rest is the vertical feather style made of four or five feathers glued together and cut to a parabolic shape, but before this is applied to the bow, some sort of soft arrow plate should be glued to the side of the sight window to quiet the side pressure of the passing arrow. This arrow plate can be soft buckskin, a piece of mole or muskrat fur, or even a soft corn plaster or wool felt. Use Duco cement to glue in place, then fasten the feather rest. Both should be positioned on the same axis up and down the bow.

Now put the bowstring back on your bow, brace it, and locate the nocking position of the arrow. When using a hunting arrow, the nocking position should be such that the arrow points slightly downhill. In other words, if you were to place an arrow directly across the arrow rest to the bowstring so it was perfectly horizontal, you then should raise the nock up the bowstring about one-fourth inch to have it in the right position for shooting. Position your nocking points to bring the arrow into this position. You can buy commercial nocking points for this purpose, or make your own by wrapping a bump of thread on the string serving and gluing in place with Duco. A nocking point both above

(Continued on page 40)

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Sight Window—6" Fist Mele—7" to 8"
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Sight Window—7½" Fist Mele—6½" to 7½"
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SPECIFICATIONS
Length—66" Draw—to 30" Weights to 60 lbs.
Sight Window—7½" Fist Mele—7" to 8"
(Add 10% for weights over 60 lbs.)

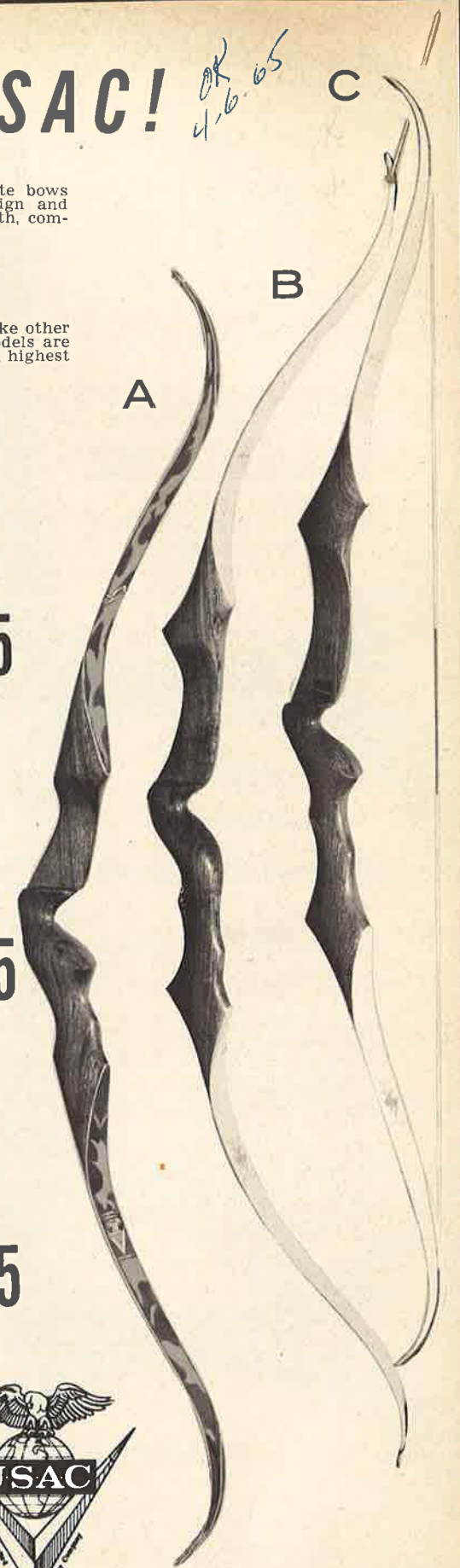
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TACKLE TIPS

Tom JENNINGS



The question of which is your dominant eye is enough to make any archer appear puzzled. But there is a simple test for determining what may change your shooting style.

When you see Joe Doakes, the local champion, pumping arrow after arrow into the middle of the target, the average comment is, "Boy, look at Joe's form," or "Look at his release." Never do you hear, "Look at Joe's good eyesight." However, the biggest single factor in accurate shooting is your eyes! Just stop and think, everything Joe's good form does or his terrific release does must be directed through his eyes.

Until I started to research for this article, I myself, an archer for thirty years, did not fully realize the importance of good eyesight to good archery. I would like to give credit to Dr. James R. Gregg, past president of the California Optometric Association and professor at the Los Angeles School of Optometry. He sure opened my eyes about eyes. I could write reams about the eyes but will restrict myself in this article to the importance of the dominant eye.

The first and the most important optical problem an archer runs into is the question of the dominant eye. The definition of ocular dominance is: "The superiority of one eye over the other in some perceptual or motor task. The term is usually applied to those functions which are not based on the visual acuity of the two eyes."

In other words, dominance is related to some function such as aiming, and in most cases, the sharpness of vision is not a factor. The exceptions are total, or near total, blindness in one eye or some other physical reason.

You must determine which is your dominant eye! No one else can do this for you. To do this, proceed as follows:

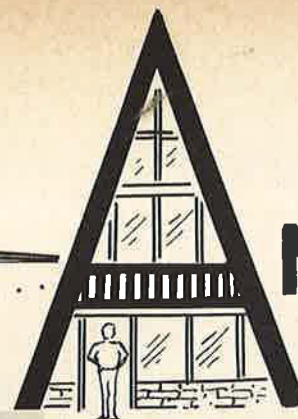
Punch a hole the size of a pencil in the center of a sheet of 8½ by 11 inch paper. Grasp the short edges of the paper in each hand and hold out at arm's length. With both eyes open, sight a small distant object in the center of the hole. Now keep the object centered and move the paper in until it touches the face. The hole will be in front of the dominant eye. Repeat this test two or three times just to be sure.

Ocular dominance varies with the individual. With some people it is evident and easy to determine. With others, such as ambidextrous people, it is difficult to determine. Even if there is only a slight preference, an archer always should sight with his dominant eye. In the case of the instinctive shooter, who shoots with both eyes wide open, it is imperative! With the sight shooter, it is possible for him to close one eye and force either eye into the aiming eye. If he is closing his dominant eye and forcing the other eye to aim, however small the difference, there will be a certain amount of strain. This strain will show in the accu-

(Continued on page 41)



where the deer and the



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USAC's Kentuckian

goes coyote hunting in Arizona

By Jim Dougherty

WARM winter sun; there is nothing like it. Contemplating this phenomenon of nature was easy, as I savored the delicious feeling of the rays chasing the chill from my back. The Arizona sun had lulled me into an attitude in which one should not indulge when calling coyotes. I should have known better.

There was a sudden commotion at my shoulder — a wild scrambling of feet, flying gravel, chaos. As I stared into the dilating eyes of the coyote I felt I could see the wheels' frantic turning, the complete registration of the varmint's total disbelief. This awareness on my part must have been mutual, the coyote noting my own shocked expression. We both got into gear, but the dog was in high while I still fumbled in first. He made the grade, while Dougherty dropped his transmission.

Left: Dougherty holds the Kentuckian bow ready for instant action as he uses call to lure in a suspicious coyote. (Below) One of the elusive desert dogs advances cautiously through the sparse, dry underbrush.



Our annual Arizona coyote hunt had brought Doug Kittredge, George Wright and myself into this winter playground. There are two types of playgrounds for winter and Doug had escaped the white carpeted chilly variety of his Mammoth Lakes retreat to join in this fair weather foray. Purpose for this trip was to attend the annual World's Championship Varmint Calling Contest and to get in a few days coyote hunting with Bill and Sam Dudley, both of Phoenix.

When the fearless leaders in the offices of BOW & ARROW expect something done to test hunting bows, sometimes the field editor has a problem. Winter months usually are not recognized as hunting months, but the annual coyote bash and the USAC Kentuckian bow both came at the right time.

The stand which should have left one wild coyote sprawled in the grass instead of hightailing it to Mexico was over. Swinging up my bow, I joined my companions who politely chose to ignore my grand performance, as we retreated to our vehicle.

Sam Dudley is the dean of coyote hunters. Among the whistle blowing fraternity, he is a living legend, considered the best field caller in the business. There was a faint and amused twinkle in his eye as he slid his .243 Remington back into its case. I made mental resolution to put on a better show next time.

Our vehicle was a 1965 Ford three-quarter ton pickup truck, twin I beam and all, in the F-350 Camper Special. It was gloriously topped with a ten-foot *El Dorado* cabover camper comparable to a suite in the Beverly Hilton. I am hardly qualified to offer much in the way of technical data but from a layman's viewpoint, this was a swinging machine.

The *Kentuckian* is one of the bows in the United States Archery Company's line of missile flippers which looked as though it would do an adequate job, if the fellow



Ford's F-350 Camper Special was mounted with the ten-foot cabover El Dorado, which made for comfortable living, yet provided power.

behind it would stay awake long enough to get the shooting done. It is a sixty-inch bow with nice lines and a comfortable handle. At this point, that was about all I could say, having blown my first chance to shoot it. George Wright had turned her up with nocking point and feather rest, while we were getting the rest of the coyote gear in order. The plain fact was we had picked the bow up on our way out of town the previous night, and although the camper was big, it was hardly large enough to practice in on the way south. The bow pulled a smooth forty-five pounds at twenty-nine inches and seemed quick enough in getting the sticks out of the box, George had also shot it at a cardboard box while I fixed lunch in our house on wheels. The only thing I had noticed during the session was that it seemed to be my durals he was clanging off the rocky landscape.

Kittredge had taken off with Sam's son, Bill Dudley, shortly after we arrived. Clutching his Howard Gamemaster and quiver in one hand and a Sako .243 in the other, he made a most interesting sight, red beard waving beneath some ridiculous hat liberated from a weird skier high in his mountain retreat. The Dudleys' are riflemen and seemed perplexed at the large amount of Indian-type gear stashed in the spacious closets of the *El Dorado*; perplexed but nonetheless interested in what we could do with our toys.

"Hope you brought your rifles along, too," Sam said. I kind of grinned and allowed as how we had but intended to give the dogs a real go with the bow before resorting to firepower. I could understand Sam's concern. He was involved with thinning out the high population of maurauding prairie

wolves and takes his work seriously. Calling in coyotes, then letting them escape is a sure way to educate the dogs in a hurry. There is no doubt that they can communicate with each other, creating a problem of no small proportions. Sam reckoned that our silver shooting would be all right, but he was riding back up with the .243 just in case. Now, on our first stand, I had caused his concern to become reality.

On the way to the next calling location, I pointed out the features of the *Kentuckian* to Sam. She was quite a long handle riser of bubinga with just the right amount of weight. The limbs sweep into a long deflex flowing into a deep and full recurve. Backed and faced with *Perma Glass* of USAC manufacture, it has a unique feature of being factory camouflaged. Both the backing and facing glass is covered with a layer of camouflage cloth apparently glued in place prior to finishing. This, I felt, would do a bit toward reducing the normal speed of the bow by adding the restricting weight of a lifeless material. From a camo angle, it also has a partially non-functional feature in that the finish is nice and shiny. It is not so much the color of the backing or facing material that cause game to alarm but the reflections in available light. In my opinion, the bow should be covered with a dull finish to achieve the desired effect. As it is, additional work is still necessary to conceal the bow from the keen-eyed probing of a living target. The limbs are wide and stable consisting of one parallel and one tapered lamination, easy to draw and difficult to torque with improper finger pressure.

The 352-cubic inch V-8 pulled us through a sandy wash and into the protective shelter of a row of high

mesquite. George Wright slid from behind the wheel and surveyed his handiwork with a comment about the vehicle being most difficult to hide. I handed him the bow and slid my Browning over-under out of the case, dropping in a load of fours and a load of twos. At George's raised eyebrows, I nodded toward Sam, indicating that perhaps double back up would put his mind to rest a bit, and we headed for a large wash thickly laced with greasewood and mesquite. The coyote likes to lie up in mid-day along such washes and the caller should move into this bedding area rather than try to draw the critter out during siesta. The tempting squealing close at hand seems harder to resist than one some distance away.

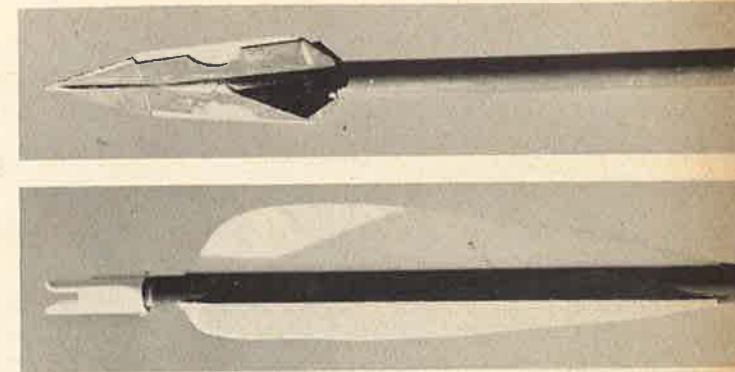
It appeared we were running a coyote education program. Less than a minute after my opening series, a coyote boiled in on George who was ready for him kneeling at full draw. As he loped by, the shaft cut hair from his chest. Tail straight out, the dog put it in overdrive, scratching gravel in all directions right by Sam, who split the air with a loud boom from a hastily shouldered firestick. Unscathed, the coyote disappeared into the tangled security of the thicket. Throughout the confusion I had continued to call, picking up the tempo to cover the fusillade. To make matters worse, another dog came thundering in from the right quarter, sailing over a patch of prickly pear, yellow eyes seeking the cause of all the ruckus. The muffled chuck of an arrow striking some yielding substance led me to believe that George had scored with a quickly nocked 1916, but the coyote came out in the clear, moving as though the very devil had jabbed him in the rearward portions. George had scored on a really record class saguaro cactus, driving a shaft deeply and mortally into its heart.

I was beginning to feel bad about this whole show, and George came back shaking his head, knife dripping cactus juice, as he popped the dulled and dinged shaft back into the Bear snap-on quiver that fits the *Kentuckian*.

At George's comment about the arrow flying poorly, we changed the quiver load of ammo to a set of 2016s fletched with five-inch white parabolic feathers. I gave Wright some static about being able to tell good arrow flight at ten feet, but he was in no mood for my analysis of his abilities.



Author found that the Bear snap-on quiver was perfect fit on the USAC bow, holding arrows handy for use. He also reports that the bow's handle was comfortable fit.



For coyote hunting, Dougherty used Little Shaver broadheads, but equipped them with Exacto razor blades to gain added cutting power. Fletching was five inches.

With bow at full draw, George Wright catches target in an off-guard moment at left. (Below) is the evidence of the shot made with USAC's *Kentuckian* in 60-inch length.



Each arrow was tipped with a *Little Shaver* broadhead. Normally a two-blade head, I had altered these into four-blade affairs by having a friend silver solder *Exacto* razor blades to the ferrule. These are the most effective heads I've ever seen — even on cactus.

Talk around the campfire that evening was archery and varmint calling with the Dudleys tossing in a few comments on comparative ballistics in order to put us archers in our primitive place. We had done very little to start the father-

son team in pursuit of archery careers. Blame cannot be laid to the equipment, as Doug Kittredge's had been found effective in past hunts as had the Bear *Kodiak* George favors. There is a possibility — remote, I admit — that it could have been the men behind them that had made this day a bow-hunting blank. By firelight, we shot arrows at the box again, drilling it neatly and frequently, which leads me to believe we panic in the face of the enemy. Both George and I complimented the USAC

product and Kittredge joined in the firelight fray, solemnly pronouncing the bow "fit."

"It is not," said Kittredge, "necessary to down game in order to prove a bow's worth; it is not whether you win or lose —"

"But who keeps score," interrupted Wright. I excused myself from the philosophical words of my compatriots and poured a sundowner.

Sunup on the desert came amid the spine tingling wail of a million coyotes greeting the pink edge of daylight over the eastern mountains. Through the open window of the camper, the chopping barks and howls rolled into my technicolor dreams, bringing me upright in my double bed. "Listen to the coyotes," I said intelligently.

Rolling from the down-filled bag, I hit the deck flat-footed. The shock damn near killed me. The floor was an iceberg in the Arctic, and I looked again to be sure the brown tile had not turned blue. Seconds later, the realization that it had frozen during the night became shockingly clear when I attempted to fill the coffee pot with water. You do not pump ice. Kittredge, fresh from his winter struck home, leaped out of the sack like it was a balmy spring morn and pattered around barefoot and half naked while George and I struggled into every stitch at our disposal.

"You flatlanders have not the hardy souls of your mountain

Left: Bow tested by author pulled forty-five pounds at twenty-nine inches. Easton aluminum arrows were used in this field test in Arizona.

Dubious value is found in the camouflage facing on the bow, as the finish reflects a great deal of light.



World varmint calling champs are (l. to r.) Bill Dudley, first; Al Abbott, second, and Ronnie Mills, third. Mills' father is former champion.

George Wright, hiding behind his hat, and Doug Kittredge, hiding behind his beard, inspect the Kentuckian.

brethern" intoned the man. Much more of this guys' kookie philosophy was liable to get the subject matter of a certain field test altered a bit.

As breakfast was being prepared, George and I bravely ventured outside to continue the field test. Repairing to a sandy wash, we began shooting the bow that, in the cold, had gained a few pounds — or so it seemed. We both established point-on distances, George getting fifty-five yards average and I fifty-seven. It seemed stupid to be so concerned, when the shooting had been more in the neighborhood of fifty-five feet.

The handle of the bow is one of the nicest fitting factory jobs I've seen. The line of limbs, however, is quite a bit behind the handle which will induce smoothness of draw but does sacrifice some speed.

We got off to a late start, but it didn't seem to matter, as coyotes were talking all about, grouping up after their night's hunting. I walked a hundred yards from camp and got up a double in about forty seconds to promptly plunk one at ten yards. It looked like a good day in the making.

The stands were fast and furious, the action in this varmint hunter's paradise enough to convince one of those little old ladies from Pasadena that varmint calling was as exciting as driving the freeways. Speaking of driving, we rambled the big Ford into some beautiful rough country, finding no place that she would not go with power to spare.

Wright and I called until noon before we missed a stand. In the

distance, we could occasionally hear the rap of Bill's .243, as he and Kittredge hunted in another direction. We had altered our plan a bit in order to do a better job of coyote collecting. Each stand placed the archer out in front in the expected direction of the dogs approach, while the gunners split to the sides to cover. It worked very well. George did most of the bow bending, as I took pictures with a 35mm Pentax camera with telephoto and the larger Rollei, keeping my shotgun close at hand in case I needed to defend myself. Coyotes can get mean and more than one caller actually has been charged. In country like this, it did not pay to take chances. A couple of coyotes got themselves cut up by close misses with broadheads and were neatly dumped going out with shotgun or rifle. Charging coyotes are tough to hit and let no one tell you any different. Even a standing one is no cinch.

One took it full in the chest, coming head-on and crashing headlong into a cactus. Coyotes were coming from four directions at once, and for a moment, I understood how General Custer must have felt. The confusion was intoxicating, arrows and lead filling the air. Lunchtime, Cowboy Style, was prepared on the prairie by Mr. Dudley while George and I walked a wash with the bow, looking for a big antelope jack or any other likely target.

The USAC people put out quite a few bows each named after a state: *Pennsylvanian*, *Californian*, *Texan*, *Virginian* and others. It

seemed to me, we should have an *Arizonian* but I do not believe they have come up with one yet. They also make a terrific kids' bow in the *All American Jr.* Two of my boys have been shooting them for some time and quite well, too. The bows have a three-year guarantee against workmanship — if, after three years, you have not killed a coyote, they will not refund your money, however. At \$59.95, it is competitive in the field; a good bow for the money.

One can get involved in a lot of technical dissertation on bows but, for the most part, this is not necessary. Tried under actual conditions and proven adequate or inadequate is more important. A hunting bow must be easy to handle and capable of the potent delivery of its missile without a lot of fiddling around. Speed is important and there are faster bows than the *Kentuckian* but not enough to make it a poor choice. It is, in fact, a good choice.

In this case, there was the considered opinion of two fine bow-hunters. Kittredge is widely recognized as a highly talented bow-hunter even if he does wear a nutty hat and his opinion, as I have mentioned, was favorable. On the last day, Doug took the *Kentuckian* into the bush for a final go around and found it to his liking, although he has become accustomed to a longer bow with a hunting sight.

Wright is one of the best I know in the woods. We've hit a lot of backtrails together in the last ten years; enough to give me a deep respect for his opinion. George is the type who says what he thinks and he liked it.

The USAC people should be proud of the decisions of these two gentlemen. This is an era of good bows, better bows than ever and they are constantly improving. In a time when the duds just don't last, the *Kentuckian* will be around. ●

TIDBIT FOR THE TROPHY HUNTER

YOU HAVE TO LIKE
TO SUFFER
TO LIE BURIED
IN SNOW
TO SHOOT AN ELK!

BY GARY SWANSON

Johnson had killed the world record elk a year or so earlier. He simply sat down on his lunch bucket, blew his elk bugle and received an answer of challenge. Continued calling produced a charging elk, head held high and ready for battle. Johnson aimed his arrow to cut the jugular vein, producing his kill in something frighteningly under a hundred yards.

But such shots are a rarity and the likelihood of their success is a matter of luck. The only true vein, the jugular, in the elk's neck is surrounded by fatty tissue. At the other extreme, the lungs and heart of the elk are slightly low and forward in the carcass. I was comparing this thinking with a hunt in British Columbia last fall, when I was hunting moose.

I had stalked to within twenty yards of a sixty-inch or better bull, when he spooked and took off. I made my shot at about sixty yards and hit him behind the soft part of the ear at the base of the skull. To me, it looked as though it should have been fatal, but the animal travelled for several miles before it halted in a muskeg swamp. Finally catching up, I could only stand at the edge of the swamp and watch as my prize sank slowly into the muskeg, out of sight and certainly out of reach.

Earlier in the fall, I had hunted the Raymond ranch and the surrounding Ferris Mountains and served as a guide for gun hunters, who came to Wyoming for elk, deer and antelope. It had been a tough period for elk hunters, since the weather stayed warm and the winds blew, keeping the elk high in the mountains. But my spirits had lifted after Ken Raymond had called me at my taxidermy studio to say that the state had re-opened some areas to elk hunters and that he was familiar with the Pinedale and Raspberry Ridge country. In the time that I took to get ready for the trip, a pair of noted bowhunters, Jack Howard and Doug Van Howd, came down from the Montana hill country, both elkless.

"You'll never do it unless you're just plain lucky," Van Howd prophesied. He went on to explain that he had been unable to get proper penetration of his broadheads, using even heavy equipment, and had suffered the loss of a potential trophy.

I planned on using the Darton *Valiant* bow, and I had picked one up from the BOW & ARROW offices. While I had wanted a bow that pulled fifty pounds at thirty-one inches, the one I grabbed was fifty-five pounds at twenty-eight inches. In practicing, I found that up to the twenty-eight inch mark, it pulled fairly smoothly; from there to the extreme of my pull, it stacked fast enough to be uncomfortable for me. However, the fine handgrip contoured to my oversized palm, which made up for any other lack that I may have felt.

I had Corky Johnson of Riverside, California, order a dozen 20-20 aluminum shafts and mount them with Black Diamond heads, and used his equipment to satisfy



THE smell of elk still was in the snow where the herd seemingly had passed only minutes before, but Ken Raymond, our guide, was concerned.

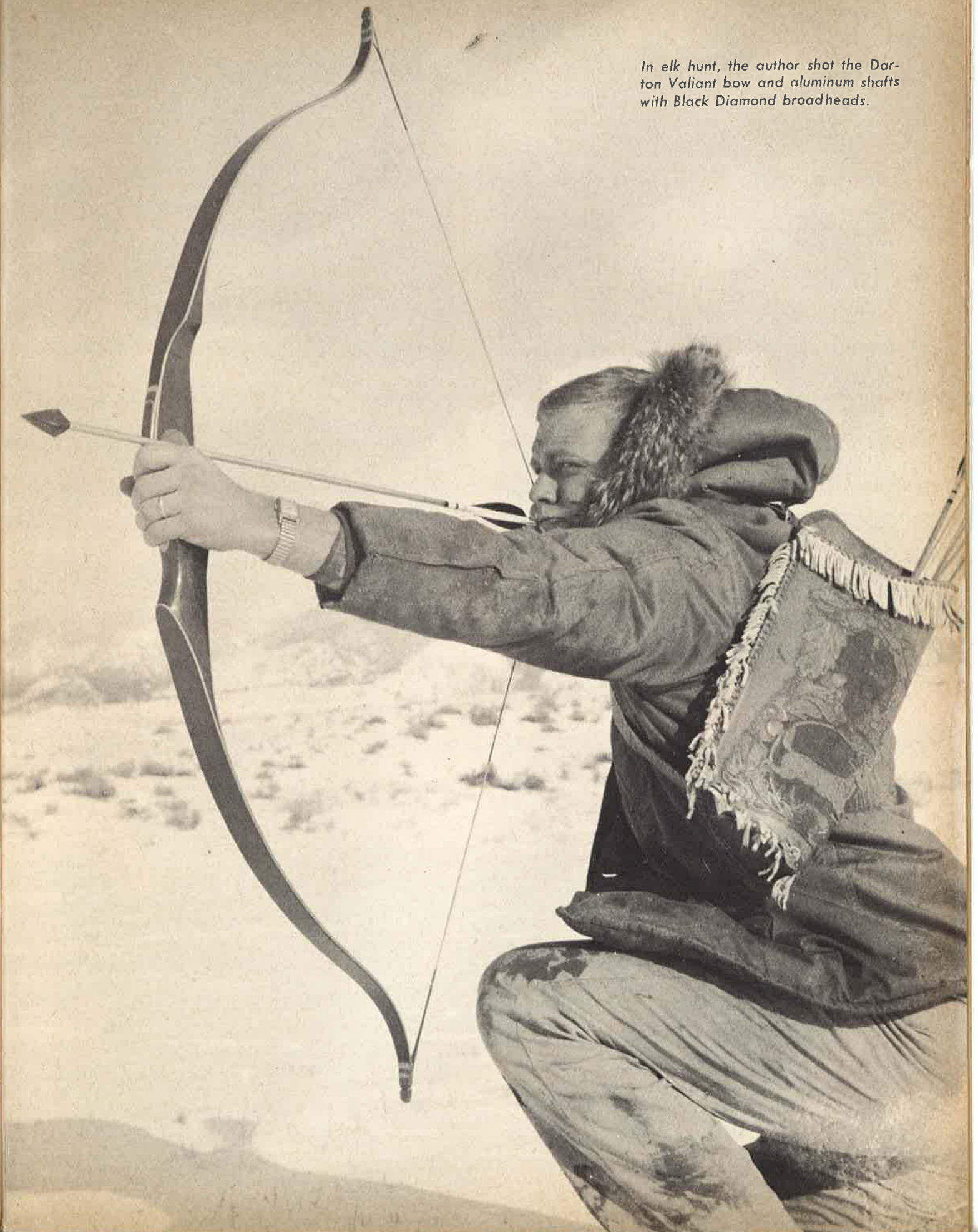
"If we go down this ridge, we'll have to ride out of here on the flat," he declared. "This snow is too darned slick for the horses to get back up."

I had come a good many miles from the sun of the Southern California desert country to the deep snows of Wyoming for the purpose of garnering an elk with bow and arrow, and I didn't want to turn back now. However, I could understand Raymond's concern for his horses and, like him, I wasn't looking forward to a ride of many extra miles with the temperatures hovering around the zero mark. As further complications, the clouded sun afforded a hint of more snow and darkness was not far off. The idea of being out in the night in a Wyoming blizzard did little for my morale.

But somewhere ahead, were elk.

The whole thing had started as a discussion. Little did I realize, when we were arguing the best point of penetration to down a bull elk with a broadhead that I would be the one to put the varied theories into practice, hip deep in snow.

During the discussion among some of the BOW & ARROW crew, it was pretty well decided that one would need a jugular vein neck shot for a charging elk, or a three-quarter shot behind the rib cage. The first theory reminded me of the way in which Bud



In elk hunt, the author shot the Darton *Valiant* bow and aluminum shafts with Black Diamond broadheads.

myself as to the draw weight of the bow. At my thirty-one-inch draw, it pulled sixty-two pounds. As I had been shooting a forty-five pounder for nearly everything, this took some concentrated practice.

Meantime, I gave Ken Raymond the word that we would be there, then rounded up Marshall Magnuson and Lowell Lawson, both of whom were eager to see the mountain country and to try their hands — or lungs, if you prefer — at lynx calling.

Snow welcomed our arrival at the Raymond ranch house and the temperature was hovering ten points above zero. After a steak dinner, Ken Raymond reminded me that a non-resident hunter must concentrate upon an elk with eighteen-inch antlers or better. This was one more requirement to complicate my plans. He explained that we would have to truck the horses into the area he had selected and that we would set up a rough camp. This meant hard hunting so that we would not have to prolong the agonies of sub-zero weather.

Before noon the following day, we had trucked into the area and found a promising canyon, where the snow was not over two feet deep. In the saddle, Raymond, Magnuson and I found that the snow made it rough on the horses, as there were slippery rocks beneath the white blanket.

Deer were scattered by the hundreds, but there was no sign of elk. However, I followed Raymond's lead, since he seemed to know what he was about. As we rode down through a saddle in late afternoon, we found the first sign of elk. The tracks in the snow looked to be about six hours old, and they were headed north toward rockier, rougher country. The snow, of course, gave us some of the advantage an archer must seek. With a rifle, you can down game at long range, but walking a canyon, the archer must be able to see his game first, then set up a stalk.

As we followed the tracks, the country began to take on a frighteningly vertical aspect. The going was fine, but that was precisely what our elk were doing: Going. Too, time was fast becoming a factor we had to reckon with. The tracks led us to the top of a long steep ridge, where we drew up to make a decision.

During most of the day, I had been clutching that Darton bow as though it were the last straw in a whirlpool. Now, my cold, numbed hand felt as though it was frozen to fit the contour of the handle. You can give me

a bunch of stuff about the Indians doing it all the time, but show me a redskin who liked to ride around in zero weather, holding a bow on the saddle in front of him and I'll show you a warrior with a masochist complex. Any normal Indian stuck to his tepee when the snows were down and didn't run around the canyons, shooting arrows at shadows. If you don't believe me, consider the fact that Custer didn't get his till spring!

Now, sitting our horses on that ridge, Ken Raymond was worried about their welfare and the coming night. If we rode down off the ridge, it meant a long ride back to camp over slick terrain at minus zero weather. Turning back meant leaving the fresh trail. It was Raymond who finally made the decision for me, as he winked at Marshall Magnuson.

"I never saw an archer yet who could leave a trail," he declared, and spurred his horse forward for the two of us to follow. I was glad that he had made the decision. He had an idea of how badly I wanted that elk.

The horses moved slowly, feeling their way, placing each hoof with care, seeking sure ground. Ken muttered that he had a feeling the next small ridge probably was where our prize would be found. We were riding into some rocky bluffs with small saddles between, and beyond, the dubious trail — if there really was one beneath that snow — led straight down to the flat lands.

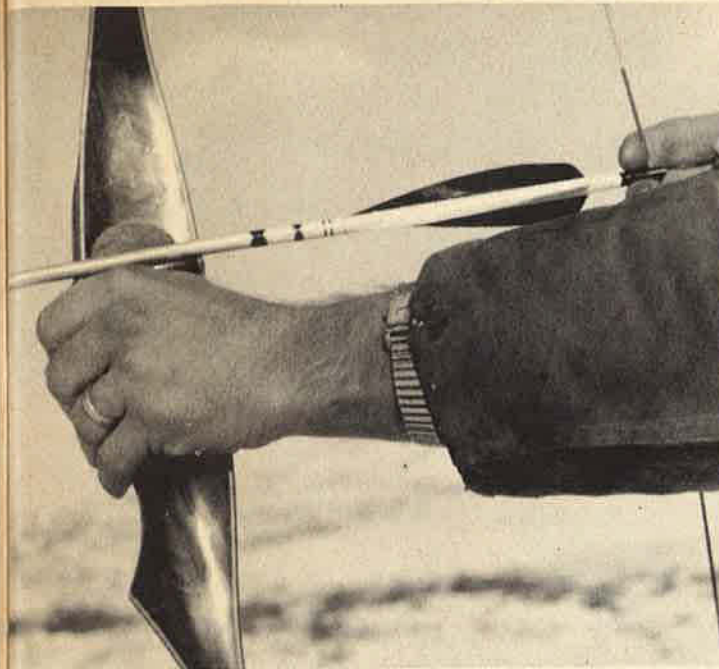
I reined up about a hundred yards below the crest of the first ridge and glanced at Magnuson, who was carrying a backup gun; a heavy caliber rifle. In case a bull elk charged me, I had no particular desire to have my friends chopping through the frozen ground to pick up the parts of me that might be left. I'm rather cowardly in some respects, and the idea of dying cold is one of them.

Magnuson swung down with me and we started up the rest of the ridge, while Ken stayed behind to hold the horses. As we lay on the crest of the ridge, breathing frost onto the snow, I saw that there were eleven head of elk only fifty or so yards away. Two were big spike bulls, the rest cows.

Only one of the bulls was worthy of consideration, I decided, but again, it may have been some masochistic tendency coming out. Maybe I like to suffer, for

(Continued on page 37)

Ken Raymond (left), the guide for this ice safari, indicates a new direction to stalking the wary elk herd.

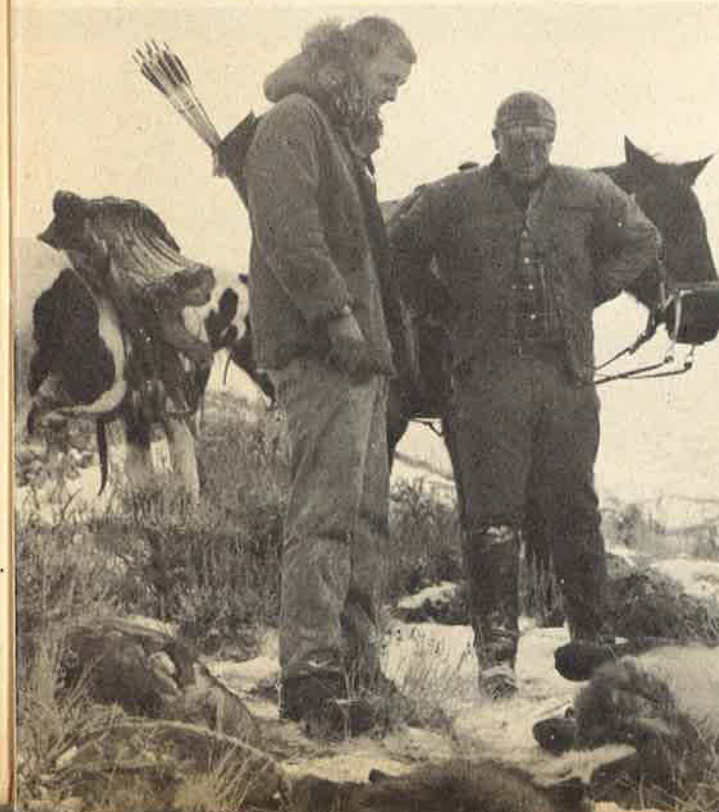


For mid-winter hunt in Wyoming highlands, Swanson had a dozen aluminum arrows custom fletched. He found that the Darton handle conformed well to his king-size hand.



Right: Swanson finds his downed elk after a hard chase through the snow. It took two arrows to stop the bull.

Swanson and Ken Raymond pause for a breather after completing the chore of caping and butchering the former's trophy. Darkness was overtaking the hunters.



One can always dream. Although Swanson's elk hardly competed, he did have opportunity to mount this trophy shot by Bud Johnson.





Profile Of A Champ:

Diane Vetrecin

She Literally Nurses Her Will To Win!

By Steven Barde

IT was a grand slam year in 1964 for registered nurse, Diane Vetrecin of San Diego, California. She took the National Amateur Women's Field Archery championship at Watkins Glen, New York; the California Amateur Women's Field championship, and the California Amateur Women's Target championship.

"Just lucky and good coaching," was Diane's remark.

It would be enough to take one of these championships but to take all in one year is quite an accomplishment. Diane started shooting in 1959 but didn't start competing seriously until two years ago. Diane lives "just around the corner" from Rube Powell, former five times national field archery champion, and when she had problems, she took them to Powell, who coached her and showed her how to overcome each specific problem she was having with her archery.

Diane wants to retain her amateur standing so no mention of the tackle she uses other than the basics, may be used. One unusual thing about Diane's shooting is that she has a 29½-inch draw. This draw length gives her thirty-two pounds with the bow she uses. All her field and hunter rounds are shot with aluminum shafts with triple helical feather fletch. The shafts used for the target range also are aluminum but she uses plastic vanes.

Perhaps the biggest problem for Diane to overcome was snapshooting. Improper holding of the bow and string hands caused this, and after attempting several corrective measures, Diane mounted a clicker on the front of her bow. Three weeks after beginning practice with the clicker her score zoomed from the 200s on the field range to over 350. The climb to 400 was slower but she presently is shooting over 450. After correcting the snapshooting problem, she now is combating a creeping release which the clicker seems to be helping to overcome, also.

Along with problems of form and technique, Diane admits her eagerness to win in competition and that being score happy perhaps has been her biggest psychological problem. No matter how good one did last week, he is expected to do better this week, so the pressure builds, not only from fellow archers, but from the individual's desire to win and improve.

Diane uses a sight in conjunction with the clicker

and a bow sling to allow a light grip on her bow, or as it is often called, the open hand technique. The sling gives her stability on the bow and prevents the bow from dropping after shooting. Diane's scores on the National 56 field were a 900 field, a 490 animal, which broke the old record set by Jewel Hamilton of Arizona, and an aggregate score of 2235. In the California State Amateur Women's Field Diane broke existing field, hunter and aggregate scores.

Everyone has a distance and target that is harder, or seems harder, than the others. The thirty-yard field face is the toughest for Diane but she also admits that all shots are a challenge. Diane works full time as a registered nurse in a San Diego hospital, and after working hours, takes her bow to the field range located in nearby Balboa Park to shoot the field round at least two to three days each week. She competes in local and area shoots on weekends, then during her

Diane Vetrecin gets pointers on correcting the bow hand from her coach, Rube Powell. The former five-time champion has helped her over those difficulties met by serious archers.



Above: Diane uses kisser and underchin anchor for 80-yard targets on the field range. (Left) For ranges up to 65 yards, she uses an anchor at the corner of her mouth. Shoots with one eye closed, concentrating.

practice sessions, she works the ranges and faces that gave her the most trouble during the last shoot.

In practicing prior to a big meet, she bears down even harder. There is usually a field meet in the area on weekends so she doesn't practice on Mondays. The other days, weather permitting, Miss Vetrechin packs her bow to the range for practice. These sessions last about three hours on the average.

When the practice and competition shooting brings out new problems, Diane goes back to Rube Powell for correction.

"Everyone is a teacher. Some hurt more than they help, but proper instruction with the same instructor is what eliminates shooting errors and paves the way to championship shooting," Rube states. This philosophy seems to hold true for Diane.

Diane was extremely happy with the reaction of her fellow archers and all her friends when she won the National. They sent telegrams and cards, and when she arrived home, the family had a big turnout and at the hospital where she works, they had a reception in her honor.

"With people like this rooting for me, I couldn't help but do my best," Diane said. Her home archery club, the San Diego Field Archers, awarded her a life-

Right: Artist's drawing of amateur champion's form illustrates her stance, manner of holding bow. (Below) Diane follows through during a practice session. At 20-yard range, she holds her anchor at the corner of her mouth.



This view shows Diane's clicker, her grip, sight and bow sling with arrow fully drawn. Note open hand with bow weight resting on the palm of hand.

time membership in honor of her winning and to show their regard for a champion.

The practice continues and the pressure mounts, since she plans to compete for a billet on the FITA team tryouts in Chicago June 19-20 this year. If she makes the team, she would go to the FITA competition to be held in Stockholm, Sweden in mid-July.

With constant practice and good coaching, Diane stands a good chance. This will to win and her proven ability mark her as a champion. The members of the San Diego Hall of Fame thought so, too, and placed her photo in the Hall of Fame where it joins that of her coach, Rube Powell.

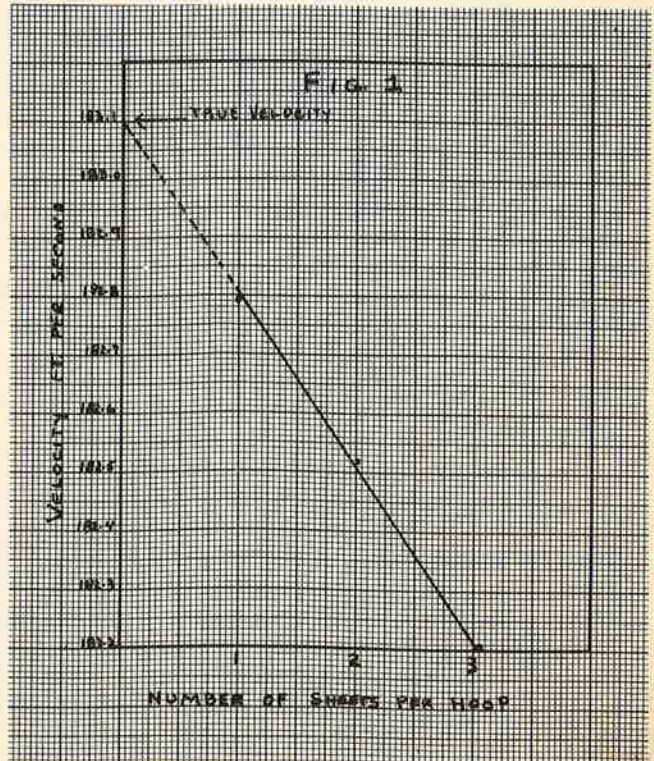
If practice and perseverance pay off, Diane will make her billet on the FITA team. Regardless of the outcome in FITA competition, Diane plans to defend her National Amateur Field Championship in 1965.





SO YOU WANT TO TIME ARROWS!

HERE'S AN ARGUMENT THAT'S BEEN GOING ON IN THESE PAGES FOR TWO YEARS, BUT THIS AUTHOR HAS SOME ANSWERS!



By Robert A. Ghelardi
Photos by Raymond Ghelardi

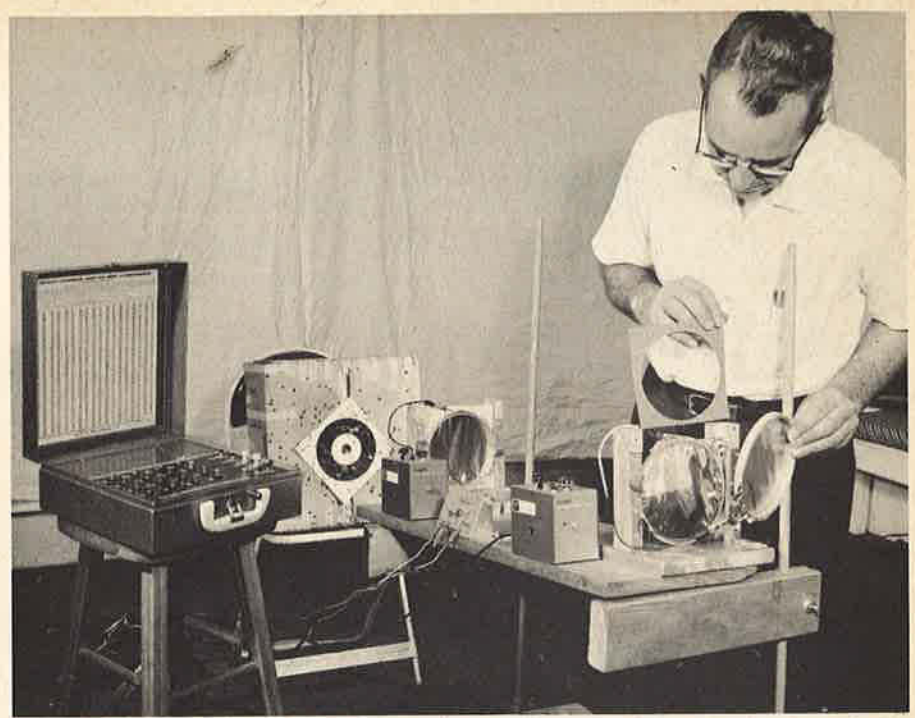
READING archery publications recently gives the impression that everyone has gone crazy over arrow timing. It seems the advent of the Space Age has made electronic timers available to archers who jump at the chance to test. That's fine. Archery needs it to carry on the work done by Hickman and Klopsteg back in the 1930s. However, before jumping in with both feet, testers should understand their equipment or erroneous results will leave them with egg on their faces.

If you want to test arrow velocity and relate it to bow weight, arrow weight and bow energy, you need a good accurate electronic timer. HerTERS, Incorporated, offer an electronic timer for just under \$100, their Mark VII Computer Chronograph. This is probably the most inexpensive electronic timer available today, yet is accurate to one hundred-thousandth of a second. There are, of course, other electronic timers selling up into the thousands. Regardless of price range, some fundamental precautions must be observed in using them. So let's talk about these electronic timers, their pitfalls and what can be done about them.

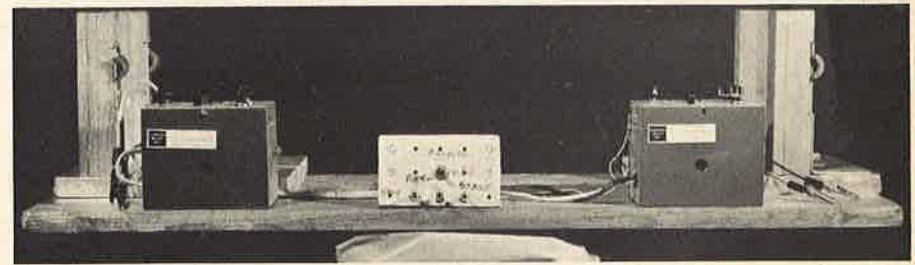
HOW THEY WORK: All of these timers are commonly used by shooting an arrow through two screens spaced a known distance apart. As the arrow pierces the first screen it breaks a circuit that starts the timer, the timer stops when the arrow breaks the circuit in the second screen. What could be more simple? Unfortunately nothing in this mad world is that simple.

TIMER PITFALLS: When the arrow breaks the screen, it produces a positive electrical pulse which the timer responds to and so starts timing. Likewise at the stop screen. But what happens if a negative electrical pulse is produced at the screen? How do you do that? Simple — let the circuit "make" after being broken. Back to that in a moment.

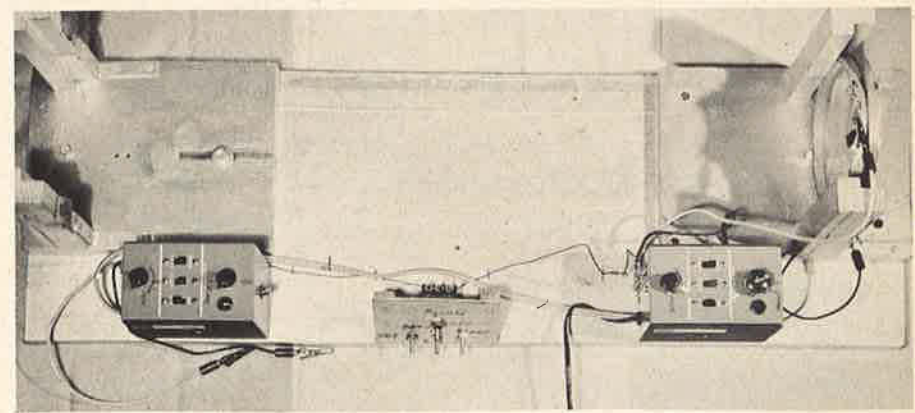
The nature of electronic timers is such that (hold on now!) while



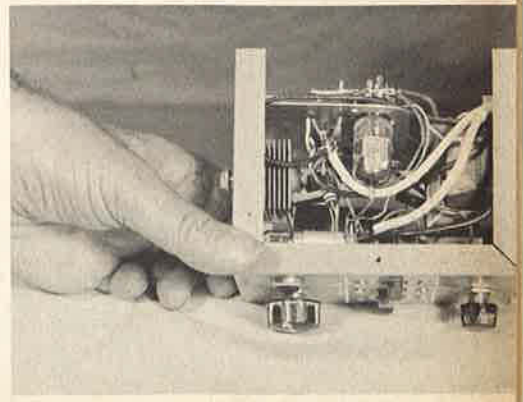
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4

1. Author inserts cardboard spacer between sheets of foil. Screens and thyatron relays are mounted on the board. 2. The thyatron relays originally were photoelectric relays. These gadgets make the timer behave. 3. Top view shows how posts are notched to take hoops. Hoop holder is adjustable to exact distance. 4. Inside the case, the thyatron is seen.

a positive pulse in the start leads will start the timer, a **negative pulse in the start leads will stop it!** Begin to get the idea? Now think about an arrow going through the timing screen. It hits the conducting wire and breaks it. Very good. You get a positive pulse. But then the arrow is metal or has a metal head and before the wire parts from the arrow the broken ends can scrape across the metal. Did you ever scrape two leads from a battery together? Remember the shower of sparks? They result from rapid making and breaking of the circuit. The same thing happens when the arrow breaks a screen. Result: a series of positive and negative pulses in each set of timer leads.

We have just seen that negative pulses reverse the action of the start and stop leads. So here we are with a beautiful timer that seems to have gone crazy. Sometimes it gives what appears to be good readings then it gets ridiculous. Martin Haynes in **Operation Experiment** (BOW & ARROW July-Aug. 1963) used an electronic timer and unwittingly illustrated what happens. He reported getting higher velocities with heavy arrows than with lighter arrows. For instance, Haynes reported getting 152 feet per second with a 424 grain arrow and 158 feet per second with a 467 grain arrow! Can't be! If the velocities were reversed, it would make sense. The heavier arrow must give a lower velocity, other things being equal. Haynes reported "strange vibrations" in the timer and absurd readings of 1500 feet per second. He

Author lines up for a trial shot using mesh screens. These were found to be unsuitable for arrow timing.



found he had to have ninety degree alignment of arrow to screen to get sensible readings. He was experiencing what happens when positive and negative pulses hit the timer in rapid succession. The ninety degree alignment Haynes found necessary, merely minimized the number of negative and positive pulses, maybe producing only one at times. But how could you tell?

READ DIRECTIONS: What can be done about it? Well the expensive electronic timers usually have means of starting and stopping with either positive or negative pulses, they also have arrangements that let only the first pulse through, rejecting all others. So if you have an expensive one, read the instructions and make sure you adjust it to respond only to the first pulse in each lead.

DO-IT-YOURSELF SOLUTION: With timers like the Herters model mentioned above there is no such adjustment. The Herters model was designed for testing bullets. It works fine on bullets. No strange vibrations and no crazy readings. Why? A bullet travels so fast that even if both positive and negative pulses are produced they come so fast that they come and go during the brief interval the timer is turning on and the timer ignores them. Not so with an arrow. An arrow travels much slower and the pulses get through.

To give you an idea, we hooked an oscilloscope across the start leads at the screen. When we fired a wood arrow with metal point through, we saw three distinct pulses on the scope as the metal arrowhead scraped its way past the broken wire in the screen. The pulses were about one six-thousandth of a second apart. We know our Herters timer turns on much faster than that, so we got a crazy reading. This one happened to be two miles per second, almost good enough to put an arrow in orbit!

Does this mean you are forever barred from using an inexpensive electronic timer? Not at all. What you have to do is supply what the manufacturer left out — a means of passing the first pulse and barring all others. This is easily done for about \$25. You need two electronic thyatron circuits. We'll skip the gory details. We made ours from the two photoelectric relays we happened to have. These things have thyratrons in them. We removed the photo cell, changed the operation to D.C. and arranged the circuits so the piercing of the screen fired the thyatron tube. Once a thyatron fires it stays fired, subsequent pulses don't affect it. The firing thyatron puts out a positive pulse which starts the timer. (You have to make sure the voltage put out does not exceed your timer's capacity. You

need about an 8 to 10-volt pulse with the Herters model.)

Interposing the thyratrons between screens and timer solves the multiple pulse problem. Here is a consecutive series of readings obtained with the same arrow shot by machine: 1359, 1361, 1361, 1360, 1362, 1360. Readings are in hundred thousandths i.e. 1359 equals .01359 seconds. Screen spacing was 2.505 feet and the start screen was placed two inches in front of the arrow with the nock just clearing the arrow rest. That's good reproducibility — all readings within one percent of the average.

SCREENS: With the pulse problem solved we turn now to the screens. There are pitfalls here, too.

Herters model comes with a supply of mesh screens. They look like ordinary window screen but are not. They are made with a continuous metal wire woven up and down through non-conducting plastic strands. Another type of screen is a plastic sheet on which is printed a continuous grid of conducting paint. In either case the timer connects to the ends of the continuous conductive path to complete the circuit.

The wire mesh type screen is definitely unsuitable for arrows. You will likely lose your feathers as we did. That's enough to make you lose your marbles, too. Even if you test with unfeathered shafts, you cannot get reproducible readings. The arrow will spread the wires, and if they do break, you don't know when or where, so you do not know over what distance your time figure applies. Wire mesh is good for bullets but keep away from it for arrows.

The plastic screen type is much better. At least feathers stay on. However, where and when the circuit breaks can still be a problem. If you are timing over a distance of 10 to 15 feet plastic screens are okay. But if you want to get arrow velocity as the arrow leaves the bow, you must time it over as short a distance as possible starting just as the nock clears the bow. Now you space the screens about thirty inches apart. To get one percent accuracy, the circuit must break within one-sixteenth of an inch of each screen location. To put it another way, the circuit must break before the arrow penetrates one-sixteenth of an inch. If the arrow hits between the grid wires or the plastic sheet gives a little you have lost.

With mesh and plastic screens ruled out, all is not lost. Practically perfect screens can be made from household aluminum foil. Get yourself four six-inch wood embroidery hoops. If you never heard of them, ask your wife. Most variety stores have them for about fifteen cents

each. Lay a piece of foil, 7x7 inches, over the inner hoop, press on the outer hoop and you have a nice tightly stretched sheet. Use two of these for each screen. Mount them facing each other and separated by a piece of cardboard with a 5½-inch hole in it to keep them out of contact. If you have a high priced timer that can be set to fire on the first pulse and reject subsequent pulses, connect it to the screens, one lead wire to each sheet of foil. Set it to fire on a negative pulse and you are in business. When the arrow pierces the start and stop screen, it shorts the two sheets in each set. The "short" makes the circuit and produces a negative pulse.

If using the thyatron relays, arrange the circuits to fire the thyratrons when the sheets short. (For electronic bugs — have the screens apply plate voltage to the grid through a resistor, take the positive pulse for the timer off a pot in the cathode circuit.) This system is slick. There is no positional uncertainty; the timer starts the instant the arrow tip touches the second sheet in the set. You can make the screens any size, so timing at a distance from the bow does not require careful aiming. You can get three or four shots before replacing the sheets by shooting off center and rotating the screens between shots. To insure good contact, polish up the arrow tips with emery paper.




FINAL PRECAUTIONS: There are two last things to do if you want highest accuracy. When determining velocity as arrow leaves the bow, compensate for air drag on the arrow by shooting downward at a fifteen degree angle. Last, determine how much the aluminum screens slow up the arrow. How? Easy. Using the same arrow, get velocities when you have one sheet of aluminum in each hoop then with two and three sheets in each hoop. This gives you three velocities. Now plot them against number of sheets and draw a line through the points. Extrapolate back to zero sheets and there is your true velocity just as if there were no foil in the screen to slow up the arrow! (See Fig 1). Using 1600 and 1700 series Easton shafts, we found the foil slows up the arrow 0.3 feet per second.

OTHER SCREENS: We have not mentioned other ways of tripping the timers. It can be done by having the arrow pass in front of photo electric cells or through electrostatic or magnetic fields, or breaking a single strip of aluminum foil and even with microphones. All of them suffer from a common defect — you can't be sure where the arrow is when the timer starts, unless you go to extreme lengths. Unless you have good lab facilities and a physicist friend, stay away from them.●

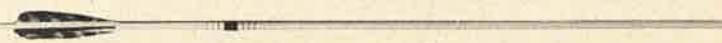
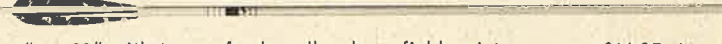
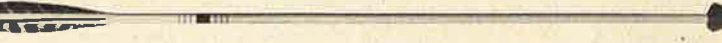
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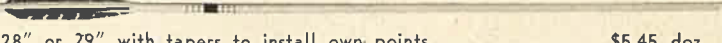
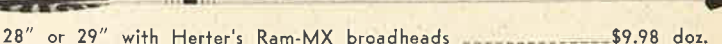
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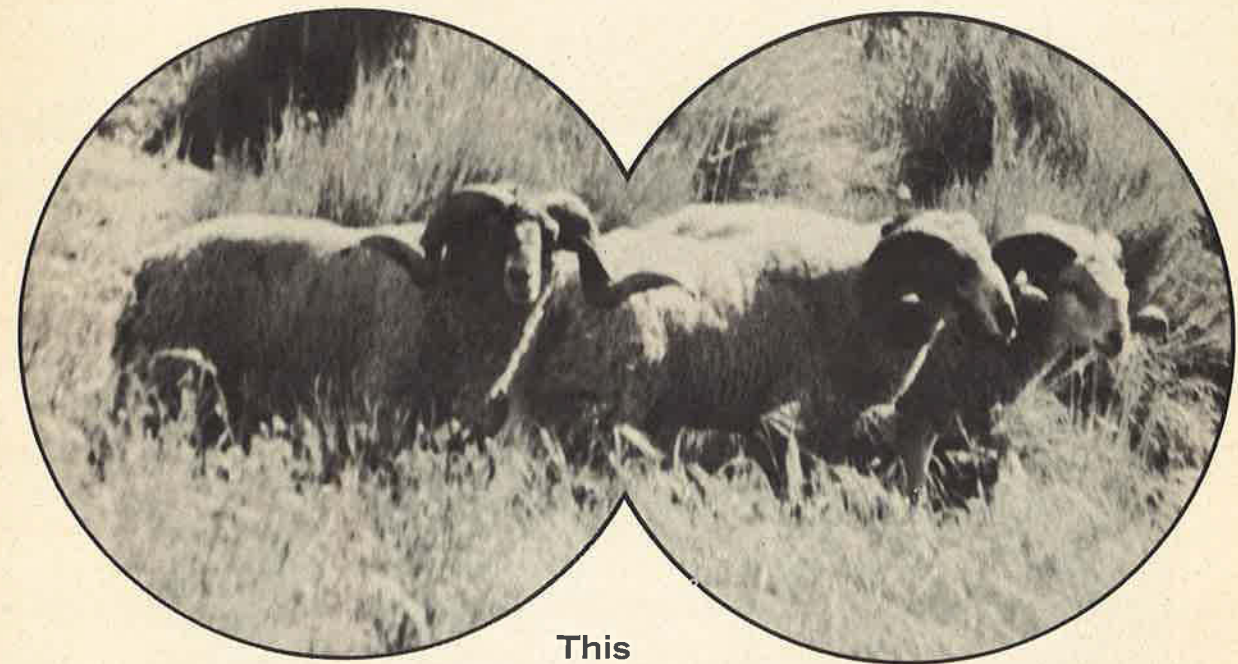
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The author poses with the Mauna Kea ram taken on his first bowhunt after this elusive cross-breed of Hawaii.

STALKING THE MAUNA KEA BIG HORN



This
Bowhunting Trophy
Is Less Predictable Than The Volcano On Which It Thrives!

By Bob Snelson

WE were bowhunting on the highest mountain in the world, Mauna Kea, in the Hawaiian archipelago. From the ocean floor this huge volcano slopes up to 32,000 feet. Even above sea level, it rises up and up past the coconut trees and fields of green sugar cane, beyond the wide expanses of yesteryear's lava flows to peak out at 13,784 feet, where skiing is moderately popular and the weather is cold the year around.

It had taken me two solid hours of the slowest stalking I had ever succeeded in pulling off — but here I was right smack in the middle of the biggest herd of Hawaiian mountain sheep I had ever seen. I had to do something fast, because we had at least four hours of hard hiking ahead of us to get back down from this 11,000 foot altitude to the comfortable hunting cabins 4,000 feet lower. It was already late in the afternoon and I didn't relish trying to clamber down this rugged mountain in the dark, but neither did I want to lose

out on a chance at the big white ram I was after. He was still a hundred yards away and a good half hour stalk was in front of me.

My guide and I were high above timberline where the only things between the game and ourselves were loose cinder shale and my net camouflage suit. Keeping the hood pulled down over my face, I had literally crawled into the center of the herd. It was important to stay on the small trail made by generations of moving sheep walking single file along the side of the mountain. If I moved off the trail, my feet sank into the soft cinder rock much like it would on a sandy beach and walking became difficult. It was easier to crawl — so I did.

When I moved, it was a slight forward motion on one knee and then stop and count to sixty slowly. Big full curled rams lay all about me. A minute didn't go by when one of them in this herd of at least one hundred rams didn't rise from his comfortable position to take a few steps closer to me to try and figure out what I was. All hunched over, I must have looked for all the world like one of them for they didn't spook and run.

However, experience has taught me that these Hawaiian rams are no different from the Dall sheep



The Mediterranean Mouflon sheep at left has been introduced to Hawaii and is being crossed with the island's feral sheep (below), thus resulting in the wary strain at right.



Even with a roadway of sorts cut into the rough-edged lava beds, the going is rugged even for this jeep.

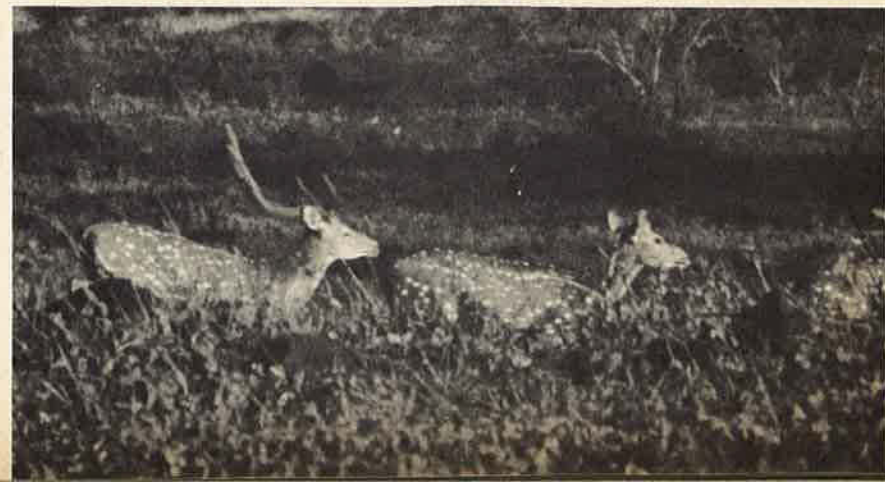


Snelson relaxes beneath the head of the trophy described in this article. It is honored in den of Honolulu home.

With the cooperation of the U.S. Navy, such types of game as this Montana-raised antelope are being imported for future Hawaiian hunting.



Another type of exotic game that has multiplied in amazing numbers in the Polynesian climes is the Axis deer, originally native game of India. It is most bountiful on island of Molokai; is being transplanted to others.



I have hunted in Alaska. Your only chance to get close is to be completely concealed and hope they will pass close enough for a shot. Or inch your way forward in a complete crouch one hundred percent camouflaged and never move like the homo-sapiens you are, for there is nothing sheep fear more than man. When I say inch, I mean inch! It had taken me two hours to cross the two hundred yards of open ground I had covered after my guide completely concealed himself and chose to watch the stalk through his binoculars. I knew that if one of these big rams spooked, the whole herd would be off and running and you get a chance like this once in a lifetime. I could have hit half of the rams in the herd with a rock, but the big full curled white ram I wanted was still some soft peddling away.

He lay like the monarch he was, surveying the vast expanse of the entire island from his vantage point. Directly below and much much further away than they appeared were the Pohakuloa hunting cabins, and beyond, nothing but mile after mile of broken lava flows and old volcanic cinder cones. We were so far away that the cabins were but small dots to me but I'll bet that old ram could count the nails in the walls, his eyes were so sharp.

Up here, the air was so clear that it would be easy to misjudge the distance between myself and the big ram but I had that in mind and decided to get within at least forty yards before I threw an arrow at him. My sixty-pound Bear Kodiak and fiberglass arrow tipped with a Bear razorhead felt completely inadequate at this point. I am an instinctive shooter and there wasn't a bush or stump or even a big rock between myself and that ram.

In the situation I was in, it was easy to do nothing. If I did not move, the sheep wouldn't spook and I could just relax and observe them forever. If I had only brought a camera, but I was traveling light — no provisions — nothing but binoculars, bow and arrows,

a compass and dry matches in a waterproof container. My guide — not allowed by Hawaiian game laws to carry a weapon of any kind — was traveling even lighter. It's a good thing he was with me, I thought. No one would believe me when I told them I was right in the center of a herd of one hundred or more rams. Even if I collected Old Whitey, they wouldn't believe me.

As I sat all hunched over, my mind wandered back to yesterday's hunt. We had stopped our jeep on the other side of this huge mountain to glass a bare rock area about a mile off the road when we heard a loud sound much like a muffled rifle shot. Following as close as we could, the echo of that sound, we picked out a large herd of ewes and rams lying on the exposed part of the ridge we were glassing. Again the sound and again. Finally we found its source. Three big rams off to the side of the herd were fighting in real earnest. Rearing up on their hind feet, they rushed at each other from about twenty feet, heads down, to butt horns with a tremendous crack like a rifle report. Then slightly dazed, they backed off and repeated the whole ritual.

It seemed made to order — plenty of cover between us and the herd to where I could get a fair shot at the big fighting rams. We had to keep low all the way, though, and stop to check our position every so often. We covered the distance in about ten minutes after zigzagging through, around and over many lava rocks. Some were as big as a piano, which at sometime in history had simply been thrown there by the volcano a good mile away. The rocks were scratchy and tore at our clothes, hands and knees as we made our way toward the rams. We both needed Band-aids for cuts on us before we got to a good shooting position.

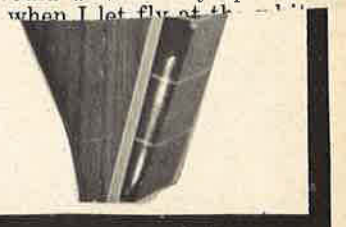
A perfect stalk — the rams still engaged in mortal combat not fifty yards away looked like easy pickings, as I began my draw. The arrow came back on the string, I anchored and took careful aim, then I had the most terrific body shock I can ever remember. My whole body ached and stars started coming out in broad daylight. In a wink the herd was off and running and were out of sight in less than a minute.

The string on my Kodiak had undoubtedly been cut by one or more of those sharp lava rocks that can make hash out of a new pair of boots in a week. When I came to full draw, the few strands left just couldn't hold the weight and had let go with a loud crack, spooking the whole herd out of sight.

Now, as my mind meandered back to the moment, I was tortured at the prospect of how many things can go wrong for a bowhunter. I rechecked my bowstring — it was ready. Forcing myself, I began to move toward the big white ram I wanted. I had collected a ram on my first bowhunt a year earlier and so on this hunt I was not after just-a-ram. I wanted a rare white ram and here in this big herd there were two, lying close together now only about seventy-five yards away. I was tempted to shoot after each move I made toward them, but I forced myself to wait and get closer. An eternity later, I was close enough. I knew I would get only one shot as the whole herd lying so close to me would undoubtedly spook at the sound of the bowstring when I let fly at the...

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(Continued from page 35)

As the arrow left the bowstring, the ram jerked his head around at the sound of the bowstring but too late. The arrow found its mark. In a flash, the big ram was on his feet and running. The whole herd had spooked and was charging down the mountain in a unit. My ram was lost in the herd. I knew a blood trail on cinder is impossible to follow, as the blood takes on the color of the red cinder and they become one and the same.

Then a straggler began falling back from the herd — my ram. Before I could congratulate myself, the ram was rolling over and over down the mountain with me running after him for all I was worth, yelling like a wild Ubangi. He was dead when I reached him, and the next time I looked up, my guide was slapping me on the back congratulating me.

Our prize was caped in record time and we started our descent off Mauna Kea none too soon as the sun already had dropped behind the mountain peaks above us.

The last thousand yards of our descent was in total darkness but we made it without incident, using the pocket flashlight I always carry for such emergencies. As the lights of the cabins at Pohakuloa blinked at us from the gloom ahead, I let out one more war whoop for good measure and said a silent thanks to the Hawaiian gods for being so good to me on Mauna Kea.

A program has been underway for several years on Mauna Kea to develop a true Hawaiian Bighorn Sheep; an animal to compete in trophy value with any other big game in the world. This program has been quite successful. It began by crossbreeding the exotic Mediterranean Mouflon Sheep, the father of all the wild sheep in the world, with the Mauna Kea feral sheep.

Out of this breeding, an animal larger in stature than the Mouflon has emerged. It has kept the nervous quality of the spooky Mediterranean variety and the truly magnificent heart-shaped horns are still dominant.

Today, the crossbred rams may be hunted, and since fifty pure Mouflon rams were turned loose, it won't be long before a real animal is jumping good bowstrings all over the volcano of Mauna Kea on the Island of Hawaii.

How do you get to the island? At this point, a jet strip is now, under construction on the Big Island, as the natives call Hawaii. When it is opened, airlines will service it directly from the Mainland.

Today, however, one may catch a Pan American Airways jet from Los Angeles or San Francisco for about \$200 round trip, ending up in Honolulu on the Island of Oahu. From there, it is only an hour to the Big Island by one of the Island airlines.

Other areas are being developed, too. A pure Mouflon sheep hunt was held on the Island of Lanai in August, 1964. Only forty permits were offered on a drawing basis, but chances are, an expanded program will be opened this year. Although these exotic animals were released only a few years ago, their development illustrates how well exotic game prospers in the Hawaiian environment. A recent count showed over two hundred healthy animals in one small area of the island.

Lanai also has year-around bowhunting for Axis deer and a program has been under way for some years to introduce and establish the pronghorn antelope. These wily animals are doing well and a season for antelope hunting is in the planning stage.

The best season of the year for hunting the five inhabited Islands of Hawaii? The season is open for all twelve months to bowhunters. ●

TROPHY HUNTER (Continued from page 23)

lying there as I was, snow over my back, he was facing away from me, and there as a big cow lying directly between us. The cow appeared to be asleep, possibly bedded down for the night.

After endless minutes of waiting, I whispered to my partner that we should back off the ridgeline and move about thirty yards down the rimrock for a better shooting position. We agreed, but as Magnuson started to back off, it proved that the prone cow was not asleep at all. She spotted him.

She was instantly on her feet, moving back into the herd, but by this time, other cows were blocking my shot. The young bull had turned so that I had a three-quarter shot, but there were only about five square inches visible where I could place a killing shot.

Slowly I worked my knees under me and, as I raised up to shoot, twenty-two eyes suddenly were watching every move I made. As the arrow snapped off of the string, elk bolted in every direction, but it was a lucky move. In my excitement, I had overshot the bull. Now he ran directly into my arrow. It was a thrill, botched though the effort may have been, to see the arrow sink out of sight just behind the rib cage.

But by the time I had risen to my full height, there was not an elk in sight and it was time for tracking to begin. It was mid-afternoon as the blood trail led us down a slope that we were unable to negotiate with the horses. Realizing this, Ken Raymond had circled the area to catch up with us on the far side of the steep ridge.

We had traveled some three miles before I found where my bull had gone down for the first time. It was about four o'clock, when I jumped him again, and this time, sent an arrow into his chest cavity. But as the bull turned to run, I could see that I had made no more than four inches of penetration. It was back to tracking him, following the blood trail in the snow. But this time, we had gone less than a quarter of a mile, when we found him dead.

Upon examining my first elk taken with the bow, I found that he was a true freak in every sense of the word. The left antler had grown forward and was literally married to the bone in two places.

"Let's get out of here," I muttered after we had tied him down to a pack horse. "I've had all the snow I want to see."

"Snow ain't so bad," Ken Raymond replied. "Without it, you wouldn't have your elk."

There are some points of logic with which you can't argue — no matter how cold and miserable you may be.



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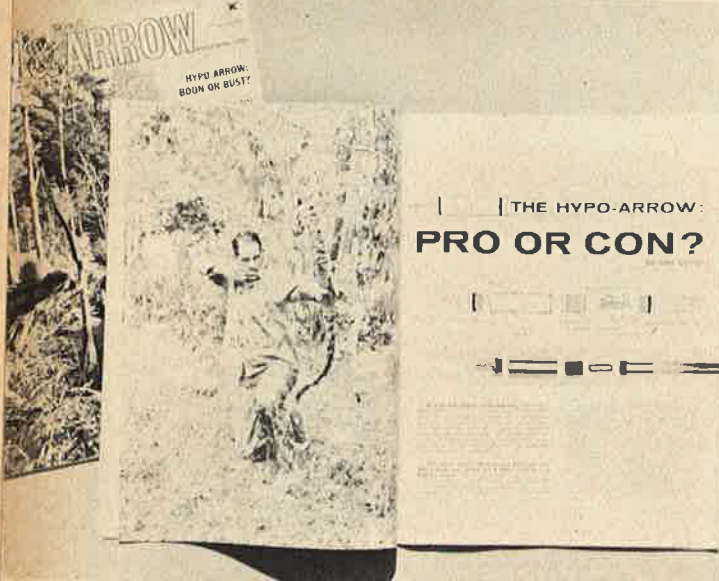
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**THE PROS AND CONS
ON THE HYPO-ARROW
COME HOT AND HOTTER!**

**TEMPEST
IN A QUIVER**



As we knew it would, Dan Quillan's article, Hypo-Arrow: Boon Or Bust?, already has created a good deal of controversy among all types of archers. However, in culling the incoming mail, there are several letters which rebutt Quillan's thoughts on the pro-side of the hypo question.

Rudy Mione of Williamstown, Pennsylvania writes:

"The best answer for the hypo-arrow fanciers can be found in Homer 'Dutch' Wambold's new book, *Bow-hunting For Deer*. He devotes an entire chapter to the subject. One important point should be emphasized. This is the simple admitted fact that a hypo-hit deer will travel for from ten to sixty seconds before dropping. A whitetail, hit in the rump by something akin to a blunt, is going to move. In thick brush, with no blood trail, this means a lost deer to half the bowhunters I know.

"Let's use Mr. Quillan, who without a doubt is a fine bowhunter, for example. In relating the events of his hypo-killed deer, he states he tried to keep his eye on the doe that was hit. They scattered in all directions and he stumbled upon the carcass. How easy would it have been had the deer been hit in the woods rather than in the open?

"Possibly Quillan could have found his deer, but there are many so-called hunters today — and twice as many tomorrow — who are incapable of following a blood trail down the middle of the sidewalk. How could they possibly follow a bloodless trail through thick brush for as far as a hundred yards? The hypo-arrow will not help the ignorant and those seriously interested in the sport of bowhunting will develop the skill and knowledge of the weapon and game to make it unwarranted.

"The controversy on the hypo-arrow was touched off initially by an obviously prejudiced non-bowhunting editor writing for a national magazine. It was picked up immediately by the prejudiced gun hunter who apparent-

ly thought this to be fresh ammunition in his fight against the increasing number of bowhunters. Now, when the bowhunting ranks are swelling at a remarkable rate and the gun hunter and public alike are beginning to realize and understand bowhunting; just when we are being accepted as true sportsmen with efficient weapons, a couple of bowhunters who are privileged to voice their personal opinions are picking up the ball.

"What are the real reasons behind the hypo-arrow advocates? Could there be an ulterior motive such as a business venture, or is it just to please the thousands who supposedly will embrace bowhunting with what they erroneously believe to be an infallible meat-on-the-table proposition?

"A more realistic possibility would be for no other reason than to appease our critics. If it is this, we are surely lost, for nothing will please these people short of completely outlawing the bow as a hunting arm.

"There also is room for argument on Quillan's statement concerning the supposedly strong flavor of venison and the pink meat, but any knowledgeable hunter or butcher will readily explain the many facets involved regarding these statements.

"Our sport often has been referred to as The Sport of Kings but with the possible advent of the hypo arrow, I hesitate to think what means will be applied to those who may still find bowhunting the thrilling and exacting sport it once was."

While this correspondent is obviously prejudiced in his own behalf and has taken an emotional approach, we also heard from Mick Burkart of Mason City, Iowa, whose thoughts are along a more scientific line of questioning. He writes:

"This article interested me, so I decided to look into it further, concerning the drug succinylcholine chloride. My father is a pharmacist, so I had him get me some information on it. He gave me a package insert on the type of succinylcholine chloride that the hospitals use.

"This insert says that it may be administered in single injections of small doses of 10 to 40 milligrams to produce muscular relaxation. This brochure goes on to say that, like all skeletal muscle relaxants, it may produce respiratory depression. It also says that the drug should be used by persons skilled in the administration of assisted or controlled respiration and facilities for this procedure and that the use of oxygen should always be immediately available.

"I was wondering if the Palmer Chemical and Equipment Company has found a way to make this drug safe for use in the field.

"I would like nothing better than to help promote the use of the hypo-arrow in deer hunting. I have been hunting for about a year, but failed to make a kill this year. I like the aspect of reducing the amount of deer that are wounded, only to die later."

In his article, Quillan pointed out the dangers that exist with this drug, but added that being hit probably would be less dangerous than being hit by a broadhead.

As for the developer making this safe for the field, the idea behind such development was to kill the deer, not to revive him with a portable oxygen bottle.

One of the most irritated letters came from Ken Brashear of Corbin, Kentucky, who is vice-president of the Kentucky Bowhunters Association and who also lists himself as chairman of the National Conservation Committee of the Professional Bowhunters Society.

Parts of his letter certainly cannot be quoted here, as they are devoted to outright slander and libel of another respected writer in the outdoor field, who was one of the first to report upon the use of the hypo-arrow. However, a part of his letter reads:

"The March-April issue of BOW & ARROW was quite a jolt. Shock, anger, amazement perhaps is a better description. The shock was that you would be party to publicizing anything about such an insidious apparatus unless it was set off with red type, the word, **Caution**, or the symbolic death's head.

"Because, make no mistake, general adaptation of this sly, treacherous device by bowhunters will sound the death knell for bowhunting; at least, as we know it. It would mean no more special seasons, no more special areas, no more need for development of special skills and knowledge, no more admiration by other hunters, and no more self-respect.

"My amazement was because of the slanted nature of the article. You said 'pro-or-con' yet the article was shrewdly slanted to appear that only the ignorant and ill-informed opposed this pyronostic.

"Remember you need to cater to about five hundred target archers, about 15,000 field archers, but at least 7,000,000 bowhunters. I'll be the first to admit all that venture into the woods with a bow are not bowhunters. That is our shame. Unfortunately, all attracted to hunting with the bow are not imbued with sterling character, have a love of the sport and the game they pursue. Some want only trophies, others self-aggrandizement, some want to be looked upon as equal or better than the greats that gave the romantic aroma to our sport, others are just plain greedy, meat-hunting poachers, recognizing the potential for carrying on their nefarious trade under the convenient camouflage of bowhunter.

"Well, bowhunting is an art, an evolutionary comprehensive cumulation of the highest tradition of good sportsmanship, fair chase, love of game and nature, game management, wildlife preservation, education for youngsters, legislation for more and better bowhunting.

"In short, **bowhunter** is synonymous for all that is good and fine in outdoor recreation. This gadget; this poison instrument advocated in this article, would destroy this. Bowhunting would be reduced to no more than "getting a deer." A kill or a bag limit does not make a sportsman. It would legalize light tackle. Skill in proper equipment handling would go out the window. Any hit would be a kill; no wounds, true, but it would encourage wanton shooting instead of skill in stalking and shooting.

"Fortunately, most bowhunters have recognized the danger. The Wisconsin bowhunters sounded the alarm and took quick action. Kentucky responded and so did West Virginia. Others are quickly moving to counteract this threat. The Professional Bowhunters Society is unalterably opposed to the use of this so-called hypo-arrow. The Kentucky Bowhunters Association offers a standing reward for the arrest and conviction of anyone using this device. Steps are under way to outlaw shipment of this device anywhere, any time, to other than duly qualified biological personnel for legitimate biological experimentation."


It was obvious that this letter — including the libelous segments — was written in the heat of anger.


While BOW & ARROW is neither pro nor con on the matter of the hypo-arrow, we do feel that it was necessary to present the article for the information of our readers. If one is against such a device, it will not simply go away because it is not reported upon. Smallpox is not cured by refusing to admit there is such a disease.

Whatever the reasoning, this matter of the hypo-arrow has been raging for years. It is not likely to be solved overnight. And it most assuredly is not going to be solved through exception without objectivity.

— Martin Haynes.

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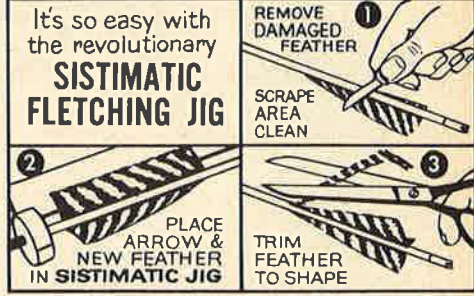
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HUNT WITH KITTREDGE

(Continued from page 10)

and underneath the nock is a help. This makes a sort of pocket the nock rests in, preventing the nock shifting on the string as the bow is drawn or if the arrow is bumped while stalking.

Install a set of bowstring silencers. There are a number of different kinds on the market to suit your particular fancy. These can tend to slow down the cast of your bow if they have much physical weight, so select accordingly. Or you can make your own simply by obtaining a couple of heavy "banker's" rubber bands about one-fourth inch in width, cutting them to make two flat rubber strips and tying these strips to your bowstring about twelve inches from the bow nock, trimming the hanging rubber ends to a length of three-fourths inch or so. These damp out the bowstring vibration and quiet the bow. With some extremely noisy bows, four silencers will have to be used for best results, affixing the second set about eight to ten inches below the first.

If your bowstring is new, shoot it a hundred shots or so to break it in. Check the nocking points to be sure they haven't changed and adjust if necessary. It is always wise to carry a spare bowstring. This string should be adjusted like the first, with nocking points positioned, string silencers in place, and already broken in with a hundred shots of shooting. This way, should you need the spare when in the hunting field, it will shoot exactly the same as the old one. Needless to say, both strings should be of the same number of strands, same material, length, etc. The extra string can be carried in the quiver or pocket; however, one of the handiest places is to simply tape it to the bow just below the handle. It won't affect the bow performance, yet is there when you need it.

The use of brush protectors on a bow is a debatable subject. Most experienced bowhunters feel they are simply additional weight added to the bow tip and tend to reduce the speed of the bow. The good they do in preventing snagging branches is not sufficient to overcome inferior bow performance.

Arrows need to be tuned up, too. Check each one over for straightness. Look at the fletching to be sure there are no loose feathers and all have the same degree of spiral. Spin the arrow like a top on the broadhead tip to check for a crooked head. Be sure the nocks fit your bowstring. Often the nock slot is too large for the bowstring and the arrow fits too loose. You can build up the bowstring at the nocking point by wrapping with some dental floss glued in place with Duco. A better solution is to reform the nock slot by heating up three-fourths inch of water to boiling in a saucepan; dip the first three-eighths inch of nock into the water to submerge just past the slot, count to ten, remove and press the nock ears slightly together holding a few seconds until the plastic cools. Try pushing this reformed nock over your bowstring. It should be snug, but not tight... a good test for being snug enough is to see if you can hang the arrow on the bowstring just by the nock. If it pulls out, it is too loose. Form the rest of the nocks accordingly, testing each one to be sure it is just right.

Before the broadheads are sharpened, shoot each arrow over a distance of one hundred yards or so, being sure you have a soft sand bank to land in. Any arrows which don't fly right should be discarded until the trouble is found and corrected. Now shoot them a few times at a bale of hay from about forty yards. Don't use a bale you care about as it will chew it up withdrawing the arrows. Any of the arrows which don't seem to group well together should be discarded. The remaining arrows you know shoot where they are supposed to. Now the heads should be sharpened, ready for hunting. Waterproof the fletching, and while doing it, waterproof the feather rest on your bow. A number of good products for this are on the market; just select one which does not have a scent to it. If you can't find anything else, regular dry fly dressing from your local fishing supplier works fine. With bow and arrows well in tune, go on out and try a concerto or two with local game herd. ●

TACKLE TIPS

(Continued from page 12)

acy of his shooting. Only go against your dominant eye when it is physically impossible to aim with it.

I might inject at this time that it is always an excellent idea to see an optometrist and make sure that your sharpness of vision (visual acuity) is up to the maximum in both eyes. By all means get glasses if necessary to bring your vision up to normal. There then will be less likelihood for you to go against your dominant eye because of lack of sharpness of vision.

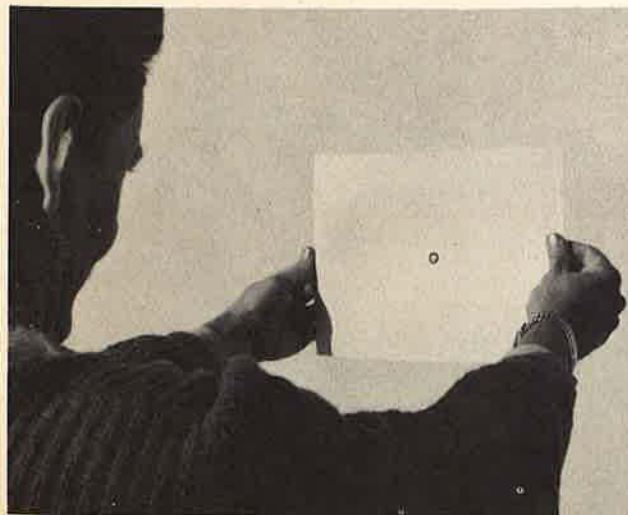
Not knowing anything about this dominant eye, many would be archers get started on the wrong foot; in this case the wrong eye! They develop muscle patterns over a period of years and constantly have aiming problems. Even when they do learn that they are not using their dominant eye to aim, it is extremely difficult to get them to change over. Of course, it feels clumsy to shoot left-handed when you are used to shooting right and vice versa, but if you are going against your dominant eye, by all means give it a try for a month or two.

If you seem to be having aiming problems use the following check list.

1. If you are not sure whether you have good eyesight in both eyes, consult an optometrist and get a professional examination. I know some people who didn't realize how bad their vision was until they had it checked.
2. After correcting your vision to the very best that is possible determine which is your dominant eye, using the test explained above.
3. If you find that you are not shooting with your dominant eye, by all means try the other eye. Give it a long enough try to overcome the physical patterns you have developed over the years. It will feel clumsy at the beginning but you will soon overcome this. The advantages of aiming with the correct eye will far outweigh the disadvantage of changing a muscular pattern.

While visual acuity usually is not related to ocular dominance, we would like to emphasize the importance for accurate shooting. The term, "20/20 vision," refers to the size of letters which are readable twenty feet away: these letters are about three-eighths of an inch high. Most eyes are able to read letters of 20/20 size, though proper lenses may be necessary. Some eyes can be corrected to 20/15 which is even better than 20/20. Any archer who has less than 20/20 eyesight should wear glasses. It is just as important as the right equipment.

This could be the reason that a new archer who has only been shooting a couple of months can outshoot you! Get an eye check and find out. ●



The easiest method for determining your dominant eye is described in this column; requires only a bit of paper.



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GET IN LINE FOR A LANE

THE fast moving effort to build archery lanes on every vacant lot across the land has slowed to a gentle walk in the past year. A number of these installations, most opened to the public at a cost of half a million dollars or so each, have found their way into the bankruptcy courts.

At first glance, it would appear that these failures were due largely to poor management and a case of the promoters becoming involved in a new type of business wherein the ground rules had not yet been developed. As a result, management was based upon ignorance and that ignorance all too often was fatal.

In recent months, however, the rash of fast buck artists who invaded the field in the beginning have been weeded out. There are lanes setups across the nation which are doing well under controlled management and knowledgeable supervision. This, of course, has been a healthy situation and now is leading to the establishment of still more lanes in areas where they are likely to succeed.

One of the latest ventures is Hall's Arrow Automatic Indoor Archery Range in Manchester, Connecticut. This establishment is operated by Art Hall, former New England representative for Wing Archery and an avid archer in his own right. He was the first New England member of the Professional Archers Association and is well known among Eastern archery buffs for the custom arrows, which he turns out.

On the opening day, the new lanes drew archers from New England and New York State for a tournament featuring a purse of \$200. Most encouraging was the capacity house of spectators which the tournament drew. The installation totals more than 9,000 square feet with ranges up to sixty feet. Soft music provides a relaxed atmosphere for shooting, while a public address system enables messages to be given to archers and spectators.

At the other end of the nation, in Hawaii, a new setup is being planned by Wah-King Thom, who has been the Ben Pearson distributor in the Pacific islands since 1935. At present, a twelve-lane installation is planned. It probably will be patterned after the Automatic Indoor Archery Center in Dearborn, Michigan, an established Ben Pearson indoor range, which is being managed by Jerry Amster.

Amster has steered a modern course in his direction of this center. He has established a league and club following, with the Ford Archers, the bow-and-arrow enthusiasts of the Ford Motor Company, making the Dearborn installation their home base. Instead of building an expensive structure, a former super market has been redesigned to handle the sixteen lanes.

As an added feature, when these lanes opened, three of the nation's leading professionals, PAA President Bob Rhode and Ann and Jack Clark spent two full days in conducting clinics, exhibitions, offering instruction and in answering questions.

Another newcomer to the field is the West Town Archery Lanes in Milwaukee, Wisconsin, where Ken Lenke has come to realize that league shoots are the bread-and-butter of such installations. As a result, he concentrates upon this clientele, promoting such shoots. He draws some two hundred archers per week, including four leagues.

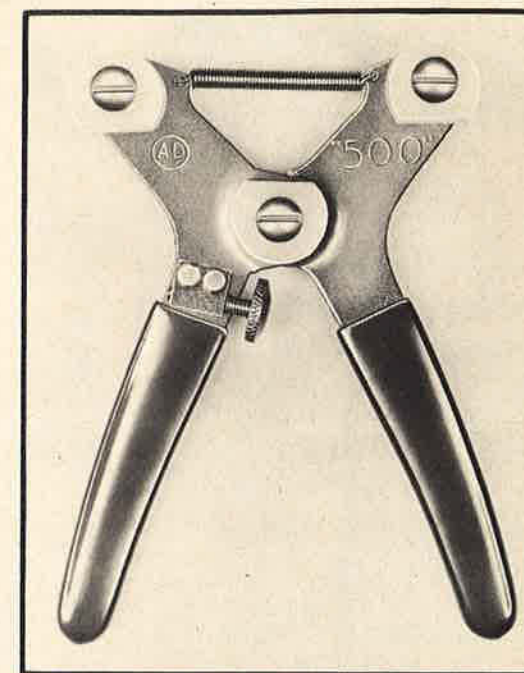
Through such practices, the installation was in the financial black within four months of its opening last fall.

It would appear that the boom-or-bust days of this facet of archery are in the past. The newness of this indoor sport has worn off and the slower, more practical approach to building business is paying off.

— Chuck Weshere

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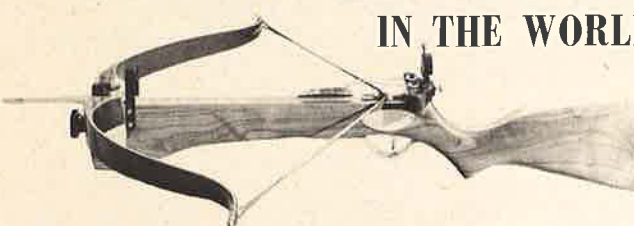
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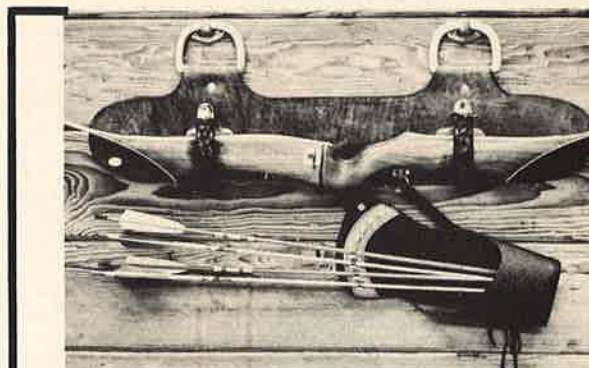
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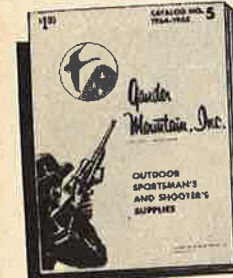
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CLUB CALL!

EDWARD W. Thomas, president of the Tioga Bowmen of Owego, New York, writes to offer a few tips that have helped his club. As he puts it, "our club hasn't been in existence too long, but we have come up with quite a few ideas, not all of them original. Nevertheless, we would like to pass them on to other clubs."

One of the most important things — a drum we have been beating in this column from its inception — for a new or established club is publicity. "Get before the public eye as much as you can. The following methods we have used to good advantage:

"First, contact your local newspaper about the formation of your club, about the election of officers and about any up and coming tournaments. Always give them plenty of notice, preferably about two weeks in advance. Most newspapers carry a sporting events column and are hungry for such items. Type your letter, if possible, and make it brief and to the point. Give them permission to print your letter and edit it if they find it necessary.

"Most radio stations have a bulletin board of social events which they broadcast as a public service. Type your notice on a postal card, again being brief and to the point.

"Another method involves signs and posters. Signs can be placed along the highways with the name of your club and its location. Be certain to ask the permission of the property owner and also to check any local laws or restrictions. By adding to your sign such legends as *Drive Carefully, Watch For Children*, et cetera, you do a public service and usually have no difficulty in receiving permission from the highway department. Regarding posters, per se, thus far we have not been turned down by any business, when we asked to display one in the firm's window.

"There are many other methods that will enable your club to get before the public eye. These include shirts or jackets bearing the name of your club, emblems for the shirt sleeve. Offering free archery instruction is an excellent means of

obtaining new members. You have a qualified member of your club designated as an archery instructor through the National Field Archery Association.

"The New York State Conservation Department sponsors a Hunter-Safety Training Program and certifies qualified candidates as Archery Instructors. If your state sponsors such a program, take advantage of it."

The Tioga Bowmen also are involved in another worthwhile project which is bound to garner interest for the club. In cooperation with the current study of voluntary organizations being made by the Department of Rural Sociology at Cornell University, the New York club has been chosen for comparison tests with a similar organization in the Netherlands.

This research is being conducted by Ernst Abma, a faculty member of the College of Agriculture at Wageningen, Netherlands. Upon completion of the survey, according to the Tioga Bowmen's president, there will be a field archery mail tournament with the sister club in the Netherlands.

IN ARKANSAS

The Arkansas Bowhunters Association — with a membership of approximately ninety — is putting out a monthly bulletin called *ABHA Game Trail*, which is certainly a credit to the organization. Not only does this publication discuss the doings of members but also keeps them up to date on legislation in their state, which can affect the bowhunter. One of the big problems between bowhunters in nearly every state has been the lack of communication and the inability to get together when anti-bowhunting legislation is pending. This publication offers such an instrument and already has proven its worth.

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PROFESSIONAL ARCHERS

Karl E. Palmatier, executive secretary of the Professional Archers Association, reports that the PAA has received many inquiries about the PAA Round and the PAA Indoor Round and whether permission has to be obtained if an archery organization wishes to use them.

The PAA Round, for outdoors, has been in general use by clubs for the past two years. Any archery organization is permitted to use it. It is designed as a competitive round to be used for cash and merchandise award tournaments.

The new PAA Indoor Round was tried out by several archery lanes and declared successful. It is designed for archers who are beyond the novice state. Again, any archery organization is free to use it.

Requirements for the PAA Indoor Round are: A twenty-yard distance; twelve ends; five arrows to an end, with four ends making a game. The scoring is 5, 4, 3, 2, and 1, with the PAA black sixteen-inch face being the official face. This round, incidentally, will be used at the Ben Pearson Open this year.

Official layout and rules may be had upon request by writing to the Professional Archers Association, Rt. 1, Box 32, Hickory Corners, Michigan.

ANNUAL CALENDAR

The Pomona Valley Bowhunters of Southern California, unlike many archery clubs, is the type of organization that likes to think ahead. Early this year, Gerald Pleshe, the

club's publicity director, released a month-by-month calendar of the club's entire schedule, including the social events as well as the competitive meets.

Realizing that the social aspects of a club can be fully as important as shooting, the club held its annual Venison Dinner in late February, making its presentation of big game hunting awards for 1964. In July, there is slated a Hawaiian-motif invitational tournament to feature a luau.

This planning ahead for the full year is something that could prove beneficial to any club, and it could increase the number of participants, since individuals then know precisely where they stand date-wise and are not likely to make conflicting plans.



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TECH TALK

(Continued from page 8)

likeness, grain for grain, making tillering easier and the bow smoother. For this reason, the one-piece stave fell out of favor. A person, as you indicate, still can find spliced staves, but we don't know of a single source for a one-piece stave.)

CLEAN IT UP

My bow is a composite recurve with a forty-five pound draw. It is a good bow, but needs a coat of varnish. I would like to know what varnish you would recommend. Also, should I sand the bow or use a varnish remover to get off what is left of the old varnish?

Steve R. Christensen,
Empire, Oregon

(You can use a good grade of spar varnish to refinish the bow and normally apply it right over the existing finish, although it will look better if you sand the existing finish first. Another fine finish is Dekt, obtainable in a spray can. Both items are obtainable at most paint suppliers.)

FOR DEER

I have successfully hunted and scored on rabbits, grouse, carp and passed up two deer, one of which I could have forced to stand up for the rest of his life, but I thought it was a poor target area. Fellow club members say a going-away shot is one of the best. What is your opinion??

I have a 55-pound bow that I draw at 29½ inches, but it seems to cast much more slowly than other bows of the same weight. Why?

Jack Ritter,
Vane, Washington

(A going-away shot on deer can be good, as you have a chance of hitting one of the large arteries in the hams, or going completely into the body cavity. However, the pelvic bone and joint sockets offer obstructions to penetration and one normally will lose as many deer as he gets.)

(A short bow such as you have has rather light weight limbs and normally will not shoot hunting arrows with the speed of a longer bow which uses parallel core laminations.)

CHANGE, CHANGE

I have just purchased a 50-pound Bear Kodiak Magnum. I previously used a 36-pound Bear Cub model and have some fiberglass arrows that are weighted for the latter. I would like to know if I could use these arrows if I were to refletch them with five-inch feathers and Bear Razorheads.

Jim McClanathan,
Birmingham, Michigan

(We suspect the arrows for the

36-pound bow are much too weak in spine to correctly shoot from your heavier bow and advise that you obtain new arrows. You can have these checked, however, by contacting an archery shop in your area and have your present arrows spined to see how stiff they are.)

WEATHER REPORT

I've heard that if you string your bow in a house or where it is warm, then take it out into the cold, it will break the bow.

In the story in your Nov.-Dec. '64 issue, Nancy Vonderheide was said to have strung her bow in a lodge, then took it outside. I would like to know whether the bow will break, as I always string mine outside when in a cold climate.

Bob Seaton, TM3
FPO, San Francisco
California

(Temperature change effects the all-wood bows, but does not have any effect to speak of with laminated bows incorporating fiberglass and wood. You can string this type in the house, then take it out into the cold.)

TRADE TALK

Recently I traded a 35-pound 60-inch Kodiak for a Bear Polar model 66 inches in length with a 45-pound draw. I draw a 27-inch Micro-Flite arrow. I know I am not pulling a full 45 pounds, as the bow is weighed in for a 28-inch draw. Could you tell me what weight I am pulling?

Also, before I switched bows, I was using a No. 3 Micro-Flite shaft and obtaining good results. I tried these arrows with the new bow with poor results. Should I go to a No. 4 Micro-Flite?

P. M. Kovacs,
Chicago, Illinois

(One should deduct 2½ pounds for every inch underdrawn. Also, you should use a No. 4, and could even use a No. 5 with a heavier bow, figuring on an arrow length of 27 inches and a bow weight of 42½ pounds.)

BIG FREEZE

I have been shooting for about a year and a half, self-taught, and recently have developed "freezing." For the life of me, I don't know what has happened. This past summer, I was shooting quite well and managed to score a number of American Rounds with 720.

I use a loose group with both eyes open, free style with a low face anchor. Any comments on this nerve-jangling problem?

Robert A. Demers,
Canton, Massachusetts

(The only way to overcome freezing that works for the majority of shooters is to draw, hold, aim . . . but not shoot the arrow. Do this

at least fifty times as you go around a range or shoot a target round. Then, when you feel confident that you can hold and aim correctly, do the same and actually shoot one.

(From here on, draw, hold and aim, but don't shoot one arrow, then shoot the next, et cetera. You are building a new habit in this way, but must break the old one. Anytime you feel you can't hold and aim, go through the routine of not shooting a few times first.)

VELOCITIES — AGAIN!

Most archers will spend a lot of time and do a lot of bragging about how fast their bow is, but few have ever known what the velocity of an arrow actually is.

Many things enter into getting maximum velocity: Fistmele, number of strands in the bow string, weight of the arrow, fletching, release, et cetera.

In hunting, the important thing is to get a sharp arrow into a vital area with sufficient penetration to kill, preferably completely through or at an angle where it will hit a vital spot. To do this, you need velocity — and weight.

With the same bow, a Kodiak Special drawing forty-four pounds at twenty-six inches, I made the following tests: No. 1: A 304-grain arrow, at twenty yards, 211 fps. (Three arrows). No. 2: A 606-grain arrow, at twenty yards, 193 fps. (Three arrows).

This was measured on an electronic chronograph similar to those used to measure bullet velocities. We found that the 304-grain arrow exerts twenty-nine foot pounds of energy upon impact, while the 606-grain arrow has forty-nine pounds. This is in comparison to a .22 long rifle bullet with 116 foot pounds, using a 40-grain bullet. A .30/06 rifle bullet weighing 180 grains exerts 2910 foot pounds.

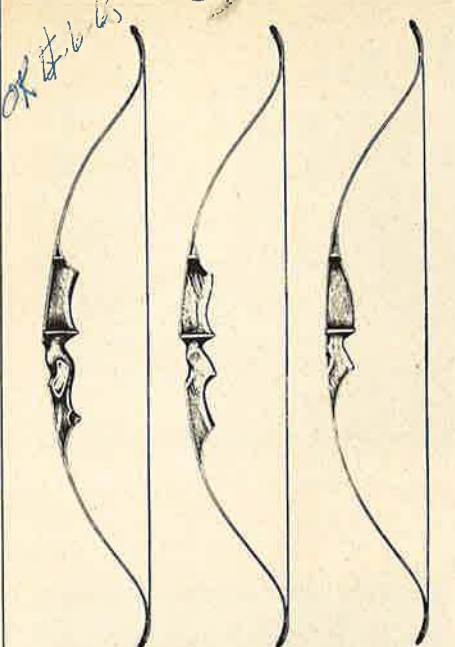
The sustained velocity of a heavy arrow over a distance of eighty yards seems to be greater than that of a light arrow. This also holds true of rifle bullets.

To sum it up, if you are not satisfied with the results of your hunting and if you get a hit with poor penetration, if could well have been that your equipment was inadequate. Try some penetration tests with a sack of sand. You may be in for a surprise.

John H. Goarder,
Glenwood Field Archers,
Glenwood, Minnesota

(We feel that this reader's experiments are commendable, but we also expect to receive letters from engineers, who will contest the validity of his findings. We are still sorting the mail we received as a result of similar experiments conducted by the B&A staff and reported in the July-Aug. 63 issue.)

FREE CATALOG



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BOW BITS



INDIAN ARCHERY

Indian Archery is now marketing a tapered triple-laminated bow in the \$85 price range. The new line was field tested for three years to eliminate possible weaknesses.

Buddy Watson, who conducted the three-year-long test, says the

new triple-laminated production bows have thinner limbs, yet are more stable and minimize shock. Anyone desiring additional information on this new line of bows, is invited to contact Buddy Watson at Indian Archery Corporation, Evansville, Indiana.

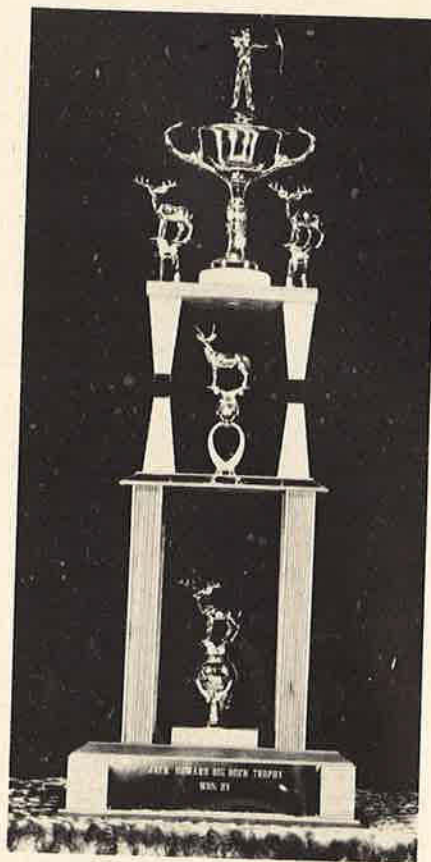


SAFARI QUIVER

A new line of quality archery quivers has been developed by Safari, Limited, which has until now concentrated upon leather goods for gunners.

The quivers, designed by John Bianchi, range in price from \$12.95 for a roughout model with matching belt, to \$17.95 for a rig that is basket weave stamped. A plain smooth leather model is available for \$15.95.

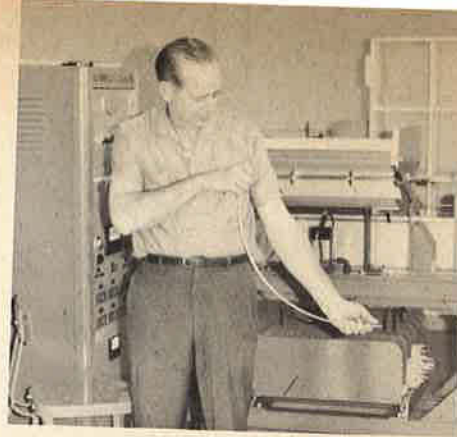
The quiver features a rawhide loop for extra arrows and a built-in pencil loop. In ordering you should state your waist size, as all of these are custom built to the individual. Top quality ten-ounce cowhide holster leather is used throughout. To order, write to Safari, Limited, Dept. BA, 945 W. Foothill Boulevard, Monrovia, California.



HOWARD BIG BUCK TROPHY

The Jack Howard Big Buck trophy, standing fifty-two inches high is a yearly permanent award to be presented to the bowhunter who kills the biggest antlered buck with a Howard *Gamemaster* bow.

Complete details on this contest, as well as a new brochure concerning Howard's bows, are available by writing to Jack Howard at Dept. BA, 415 W. Loma Alta, Altadena, California. He promises you'll hear from him by return mail if there's no hunting season on.



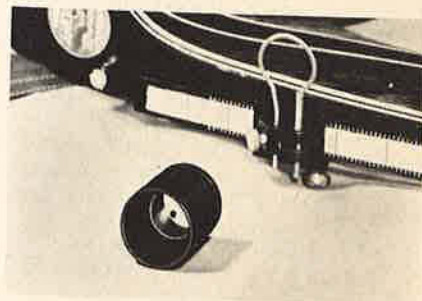
THE BIG BEND

Doug Easton, who heads up the aluminum arrow shaft empire, has come up with a new shaft, the X7, which can be bent in an arc, then will spring back to its normal straightness.

The new shaft is currently being made in sizes 1614, 1714, 1814, 1914, 2014, and will soon be available in 1716, 1816, 1916 sizes, according to Easton, who reports that this new material has an ultimate tensile strength of 105,000 to 110,000 pounds per square inch.

This is the strongest aluminum alloy yet produced and originally was designed for rocket casings. The Easton shafts are from the first tubing ever drawn from this alloy, which is guaranteed against breakage.

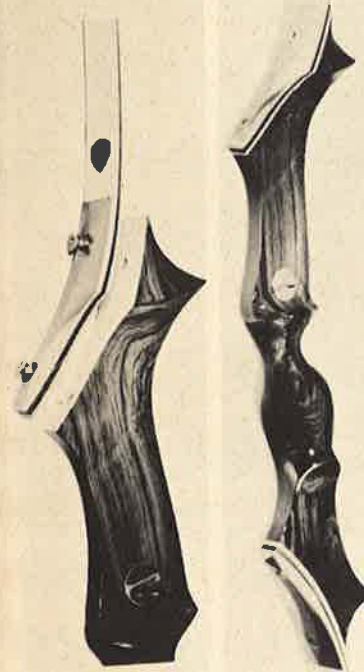
The shafts will be furnished with a neutral *alumagold* hard-anodized coating. For further information, including the price range, write to James D. Easton, Incorporated, Dept. BA, 15137 California Street, Van Nuys, California.



DOUBLE SIZE BULL

A magnifying lens meant to double the size of a bullseye at any distance without changing sight yardages is being introduced. Known as the *K-Way* magnifying bowsight, it is small, light and economical, selling for \$19.95, and it can be slipped on or off any mounted bowsight in a matter of seconds.

Including the aluminum casing, which is anodized to a dull black finish to eliminate glare, total weight is less than an ounce. For details, you can write to K-Way Sight Company, Dept. BA, 4075 N. Milwaukee Avenue, Chicago, Illinois 60641.



TAKE-DOWN FROM WING

The *Wing Presentation II* incorporates a bow design that permits an archer to carry a handle and two sets of limbs in a case no larger than an ordinary arrow box. Too, the unique design of the riser section allows the archer to change limbs at his discretion.

The *Presentation II* is meant to fill the need for two bows with the advantage of only one handle. If limbs are accidentally twisted or broken, the archer can economically replace one or both limbs, according to Bob Lee, president of Wing Archery Company.

The limb coupling design is the result of exhaustive design testing. More than 200,000 continuous draws and releases were made by a mechanical draw machine were used to determine that the limb joining system is as strong as conventional bondings.

The bow is available in 66 and 69-inch lengths and in weights from 25 to 50 pounds. A variety of target limbs will be available for field and tournament archers, and hunting limbs will be available by early fall.

A complete catalog showing this and other Wing Archery equipment is available by writing Wing Archery Company, Dept. BA, 7106 Maple Ridge Street, Houston, 36, Texas.



A HIT FOR THE HITTS

Officers of Hit Archery, (from left) J. F. Roush, O. H. Hitt and Gertrude Hitt, look over the *Shooting Star*, a new tournament bow in their line for 1965.

The new model features de-torquizing action, as the weights are precisely positioned from the pivot point. Hit is credited with introducing the dual recurved bow with two recurves at each end. This feature has been retained in the new *Shooting Star*, which sells for \$150,

and the *Black Ace*, selling at \$125. Both models come with a thickly padded bow case.

Hit has redesigned the *Black Ace* for stability, too. Its rosewood handle section has the same classic design as the 1964 model. Bow lengths of 64 and 68 inches are available in this model. The handle section of the *Shooting Star* is of imported wood and this model is available in 66 and 70-inch lengths.

For full information, write to Hit Archery Company, Dept. BA, Archbold, Ohio.



NO CRYING TOWEL

Here's something new, if you're the type who cries when he misses a shot. It's a combination archery towel and snap-on rosin pouch, but they're not meant for wiping your eyes.

Instead, the pouch contains lanolin and rosin to condition the hands. Also, the heavy sixteen-inch-square terry cloth towel snaps on your belt or equipment. It's available in assorted colors and you can have your name embroidered on it at no additional cost. For price, write to A.S.C. Corporation, 633 E. St. Clair Street, Indianapolis, Indiana 46202.

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BOW BITS Continued



MAGNA REST

The *Magna Rest*, a new magnetic arrow rest is designed for long life and simple installation. It is assembled in a single unit three-eighths inch in diameter and a half inch long.

The steel support wire is held in place by a tiny magnet which is imbedded in the base of the aluminum body piece. The force required to break the hold of the magnet is 28.5 grains, a minor deflecting force on an arrow in flight. As the hold of the magnet is broken, the support wire swings forward flush with the sight window. When the arrow is clear, the magnet power resets the support wire and holds it in place for the next shot.

The rest can be used with heavy tackle, lightweight target arrows or hunting arrows. It's priced at \$2.89 and is available from Higley Archery, 345 Landsford, Lancaster, California.



NEW NEET SIDE QUIVERS

A new line of Neet side quivers ranging in price from \$9.95 to \$14.95 is being introduced. The N-500, priced at \$14.95 and the N-499 are of top grain leather and trimmed in contrasting colors. Each has a handy pencil slot and score-card pocket, while the large gusset styled accessory pocket has an adjustable fastener.

The N-498 at \$9.95 is in smooth grain leather, but also is available in split leather without trim. They each come with belt and all models carry a dozen arrows without ruffling a leather. For further information, write Lee's Archery Shop, 617 E. 17th Street, Sedalia, Missouri.



FROM RUBE POWELL

Rube Powell's new side quiver, the *Holdster*, is frankly luxurious, yet combines beauty with utility. Constructed of fine cowhide, it is hand-carved, and within the spacious interior is a snap-down pocket to hold all the small items an archer carries. Around the inside is a continuous strip, stitched at intervals, to form holders for an extra string, sunglasses, and deep down, there is room for a canteen.

The slot pockets hold the arrows. The slots will easily handle a dozen arrows, holding them apart so fletching is not damaged. The *Holdster* attaches to a holster-type belt with three heavy snaps, allowing one to detach the quiver, when he wants to relax. Also, your name or initials, limited to five letters, are carved into the belt, which is made to your exact size.

Each order is individually crafted. For the lady archer, the overall size is reduced. Price is \$67.50 from Rube Powell's Archery Shop, 128 N. Second Avenue, Chula Vista, Calif.

GOLDEN SOVEREIGN, '65

The new Golden Sovereign catalog of archery equipment now is available upon request.

The catalog contains a dozen pages of color illustrations and the full specifications of bows, accessories, arrows and leather goods carried in the line.

For a copy, simply write to Ben Pearson, Incorporated, Dept. BA, Sovereign Division, Pine Bluff, Arkansas.



ARROW STRAIGHTENER

When referring to the A-D 500 arrow straightener, you can rest assured that the A-D refers to Adams and Dee, who are making this device for taking the kinks out of your pet alloy shafts. The tool is rugged, compact and complete in itself. It will accept all size shafts and will fit into most tackle boxes and is light enough to carry in your hip pocket.

The device has durable nylon pressure blocks, and adjustable stop so there will be no overbending, and it is unconditionally guaranteed. It's available for \$7.50 from Adams & Dee, 88 Manchester Avenue, North Haledon, New Jersey 07508.

MAJOR MOVE

After being located in the Los Angeles area for more than thirty-five years, Henry A. Bitzenburger is moving his *Fletchmaster* fletching jig operations to Sherwood, Oregon. After May 1, he will move into his new 3,000 square-foot all-electric building, which will be completely equipped with the latest needs for testing and research.

After May 1, all mail should be directed to Henry A. Blitzenburger, Route 2 Box M-1, Sherwood, Oregon.

NAME CHANGE

The Saunders Archery Target Company is no more. Instead, it is simply the Saunders Archery Company, which seems logical inasmuch as the firm now is handling some hundred archery items.

In addition to metal and wheeled stands, Chuck Saunders reports his company is marketing numerous other items. This year's catalog will list more than three hundred different sizes, colors and styles of archery equipment. You can get it by writing to the company at Columbus, Nebraska.

Send for 68 page catalogue with pictures, prices and descriptions of a full line of archery equipment.

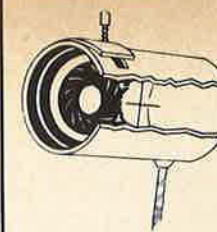
Equipment by:
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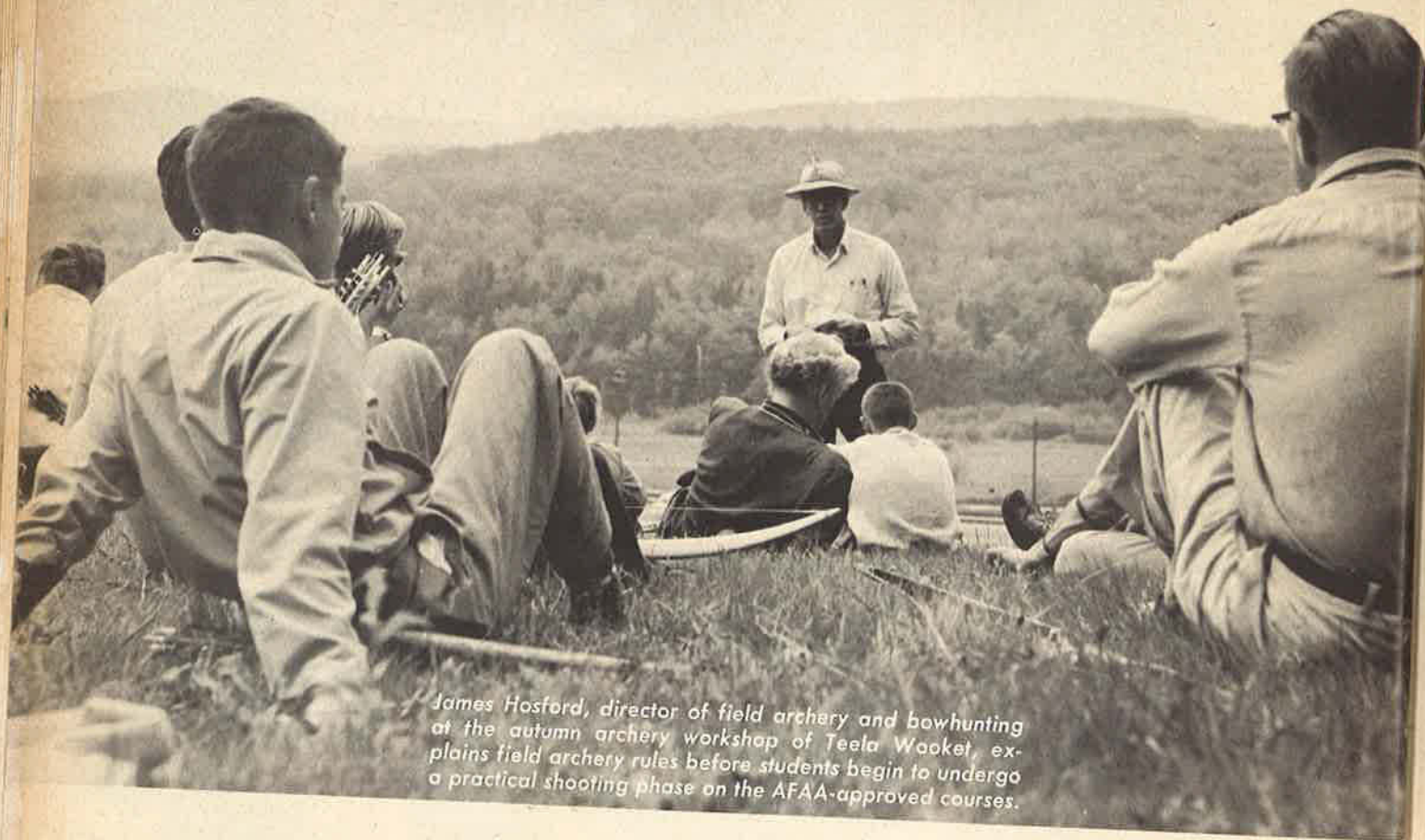


(Please print plainly!)

A MATTER OF DEGREE

SO WIDELY RECOGNIZED IS THE TEELA WOOKET ARCHERY CAMP THAT SOME INSTITUTIONS OFFER COLLEGE CREDITS FOR THIS TRAINING!

By Jack Lewis



James Hosford, director of field archery and bowhunting at the autumn archery workshop of Teela Wooket, explains field archery rules before students begin to undergo a practical shooting phase on the AFAA-approved courses.

HIGH in the Green Mountains of Vermont lies what is probably the most consistently successful installation for teaching archery to be found in the world today. This is the Teela-Wooket Archery Camp, operated by Mr. and Mrs. Edward M. Miller.

Considering the fact that Myrtle Miller took two college semesters of archery back in the early thirties and disliked the sport intensely, this could be considered something of an accomplishment in itself.

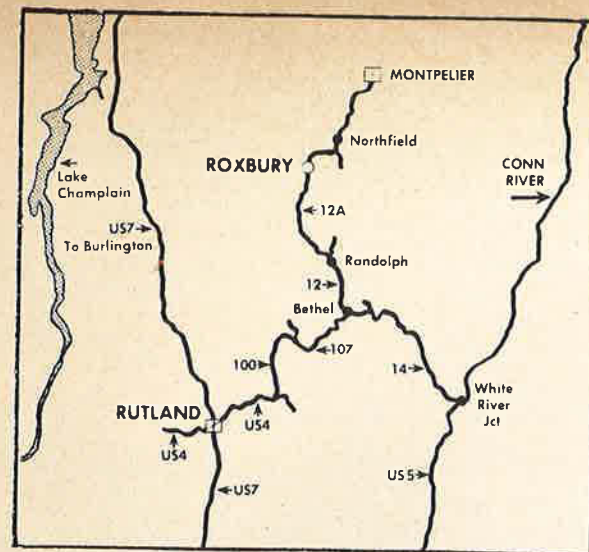
Back in 1931, Myrtle Miller was teaching physical education in Grand Rapids, Michigan, and reluctantly submitted to instruction in the sport at the hands of Russ Hoogerhyde, who then was national champion. It was his common sense approach rather than the strict adherence to theory through which she had earlier suffered that caused her to realize that this could constitute a sound approach to teaching. Some of the lessons she learned in that initial few hours still are included in the syllabus used at the camp in Roxbury, Vermont.

Today, the camp devotes itself to archery train-

ing and to archery vacations. Vacationing archers attend with their families to shoot target and field rounds and to secure instruction in shooting, as well as to work on do-it-yourself projects. But perhaps more important to the future of archery as a sport is the segment of training devoted to students who wish to become instructors. By completing the course and receiving a teaching certificate, these individuals become qualified to teach archery almost anywhere. Many colleges and universities now allow credits for completion of the course, according to Mrs. Miller.

The archery camp was organized in 1937 with the cooperation of the owners and directors of Teela-Wooket, which had been largely a girl's camp, specializing in teaching riding and horse handling until then.

Today, there are two sessions of the archery camp each summer. One begins in June, the other in late August or September. At each of the sessions, there is a program designed for the vacationer, but the June session also encompasses an intensive ten-day course for student instructors.



Myrtle and Ed Miller, the founders and directors of the Teela Wooket Archery Camp, will be starting their twenty-eighth season June 18. In her initial introduction to archery, Mrs. Miller disliked the bow and arrow sport.



For campers, there is an instruction class every morning, wherein each archer is classified; thus, a beginner is spared the psychological handicap of shooting against a skilled archer. Instruction is geared to the individual archer, with classes even for small children. Advanced target ranges, the field courses and the archery golf course are open each day and the archer may simply spend his time shooting. There are tournaments scheduled throughout both sessions and supervised practice is held on the target ranges, since the Millers are highly safety conscious.

For the instructor program, student instructors come from all over the United States and Canada, and even from Europe and South America, according

Donna Jean Hoogerhyde and Bob Anderson show that archery is ideal as the coed sport. Approximately 250 archers are trained at each of the summer sessions.

A demonstration in archery crafts precedes a learning-by-doing session. Larry Briggs, who directs this particular phase of training, is a physical education professor.





Archery golf is another popular activity at the archery camp. A staff member, Mrs. George Crouch of Phoenix, Arizona, instructs students on first round of the course.



Charles Pierson, maker of custom tackle for over 35 years, explains flight shooting with an on-the-spot demonstration during one of the sessions in the Vermont woodlands.

to past records. They include physical education instructors, recreation leaders, camp counselors, archery club instructors, youth leaders in general, and simply interested archers.

The course offered at the Vermont camp isn't simply a degree mill, however. According to Mrs. Miller, usually no more than fifty percent of the student instructors are certified to teach archery. Thus far, more than four hundred qualified instructors have been graduated from the course.

A list of general objectives has been set up by the Millers and these are pursued each summer. Included among these desires are: To improve the quality of archery instruction in schools, colleges and camps; to improve the preparation of teachers and leaders for archery activities; to broaden participation in archery activities; to promote safety in archery; to improve the individual abilities of archers; to promote archery as a family sport, and akin to this last objective, to have archery presented in such a way that will encourage young people to become interested to the degree that the sport will become a medium in helping to prevent juvenile delinquency.

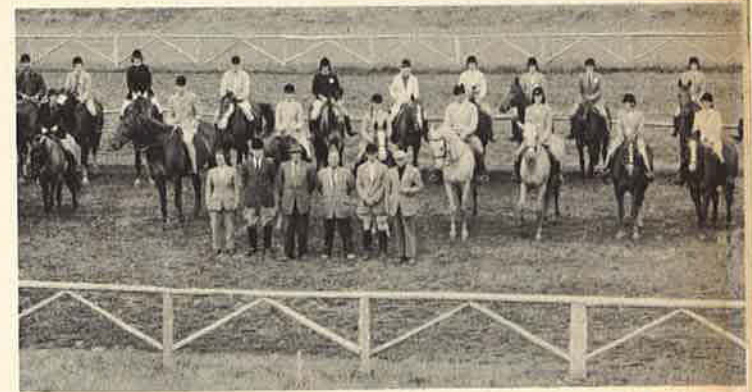
In spite of the Miller's success in teaching both the novice and the instructor, they insist that they have no professional secrets and are "eager and happy to share what we have gained through thirty-seven years of practical experience."

The Millers have compiled an archery training guide, which is distributed to the student instructors at the camp upon completion of the course. It is designed to help these instructors when they return to schools and colleges to teach the sport. However, sections of this little volume have been mailed by the thousands —

without cost — to high schools, colleges and universities. The instruction manual also is presented to all those attending Operation Archery workshops throughout the country.

Operation Archery, incidentally, is an outdoor education project of the American Association for Health, Physical Education and Recreation, and is an effort to improve the teaching of archery by means of research to improve techniques and by sponsoring special workshops to demonstrate these teaching techniques. It is under the direction of Dr. Julian

Each Sunday morning, inspiring services are held in this wooded clearing before the day's activities begin. The granite pulpit was made by George De LaHaye, who presented it to the camp, so that it could be installed here.



Teela Wooket also is famed for its horseback camps as well as archery. In a wedding of the two sports, many of the girls take up archery, learning horseback shooting.

Dr. C. N. Hickman, famed physicist who is honorary dean of the Teela Wooket Archery Camp, uses French hunting horn to announce a tourney.

Smith of Michigan State University. Financial assistance for travel expenses for workshop instructors, and equipment needed for the workshop sessions are provided by the Shakespeare Company.

"We are always happy to find that, year after year, in the inter-collegiate and inter-scholastic tournaments, many of the top teams are made up of students coached by our TWAC-trained instructors and our staff members," Mrs. Miller enthuses. "Yet, our lifetime could not be long enough to even begin to learn all there is to know, so we continue to study, work and to analyze, hoping that the standards of a great sport are a little higher the world over, because in 1937, we saw a great need and tried to do something about it."

While Myrtle Miller was still a high school instructor, she organized a club of some four hundred students and started to teach what she had learned from Ross Hoogerhyde, then translated into practical teaching steps. These classes were strictly extra-curricular and there was no money available for student archery tackle. In the ensuing years, she managed to give instruction to hundreds of teenagers, and because her groups were necessarily large, it was here that some of the group teaching techniques used today were pioneered.

Ed and Myrtle Miller were married in 1934, and

while it may not be that wedded bliss had a great deal to do with it, she was one of the nation's top woman archers for the following five years. In addition to placing high in several national tournaments, she and her husband were instrumental in the growth of the New York Archers' Club and the development of shooting areas within the confines of New York City.

Today, costs of attending the instructors' course or the Operation Archery workshops run about \$12 per day, while the vacation plan is about \$10 daily. However, numerous qualified archers have found that they have been able to defray most of their expenses by acting as instructors or by taking advantage of the scholarships which the Millers award each year to deserving shooters.

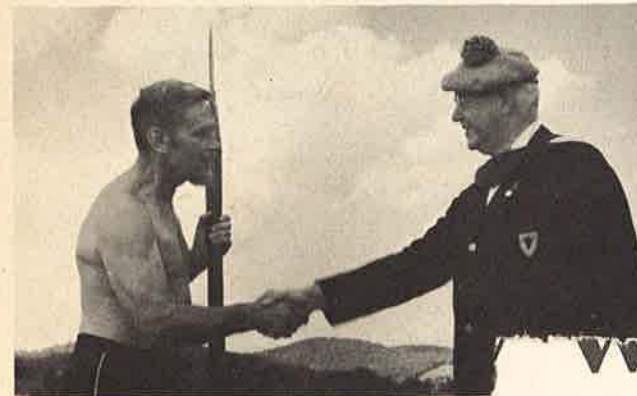
In recent years, some forty instructors have taught archery to as many as eight hundred new archers. This, of course, is beneficial to the sport. The life blood of any sport or activity is new blood, and over the past quarter of a century, the Millers have done more than their share, introducing the sport to literally thousands of teenagers.

But with these words now on paper, there still remains one great mystery yet to be explained: Who or what was Teela Wooket? ●



All age levels receive archery instruction at the Green Mountain installation. This group of intermediate students is undergoing supervised practice under instructors.

Below: TWAC is a meeting place for Hall of Fame archers. Sasha Siemel, (left), the famed hunter of Brazil's Matto Grosso, congratulates the late Dr. Robert P. Elmer on the latter being presented degree as Doctor of Archery.



Evening recreation is another facet of the Vermont camp. These guests, all students by day, are competing for the prizes during a costume party featuring archery motif.



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These nuns came to the camp for the Operation Archery workshop in order to equip themselves to teach archery in a Catholic summer camp.



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MAIL POUCH

(Continued from page 6)

behind me. There, about twenty yards away, was a large doe, head down, calmly feeding. She was too close to attempt a shot, as I felt that at this range, she would sense my movements. It was adry, mid-November day and any movement was treacherous. I eased back to my original stance, hoping she would make her way past me so I could take a shot.

I literally froze on my stand. There was a light, changing breeze. In less than five minutes, I could hear her hooves on the dry ground cover. Then I heard her breathing, and finally, felt a soft nuzzle on my left shoulder!

She immediately bolted, heading back in the direction whence she had come. I swung around for a fast open shot, but the arrow missed its mark.

I firmly believe that my camo outfit and lure were responsible for her behavior and any archer who takes his sport seriously and expects to bring home the venison, should equip himself with this gear.

Dean L. Wheeler,
Mayville, New York

WE STAND CORRECTED

For the past few years, I have been amazed at the mass of misinformation concerning the crossbow. For an editor or any person who is supposed to be informed on archery to be so much in the dark is amazing to me. I have had the same bunch of misinformation from the other archery magazines.

In a recent issue, you mentioned doubt that there is a repeating crossbow. The repeating crossbow is patented and has been manufac-

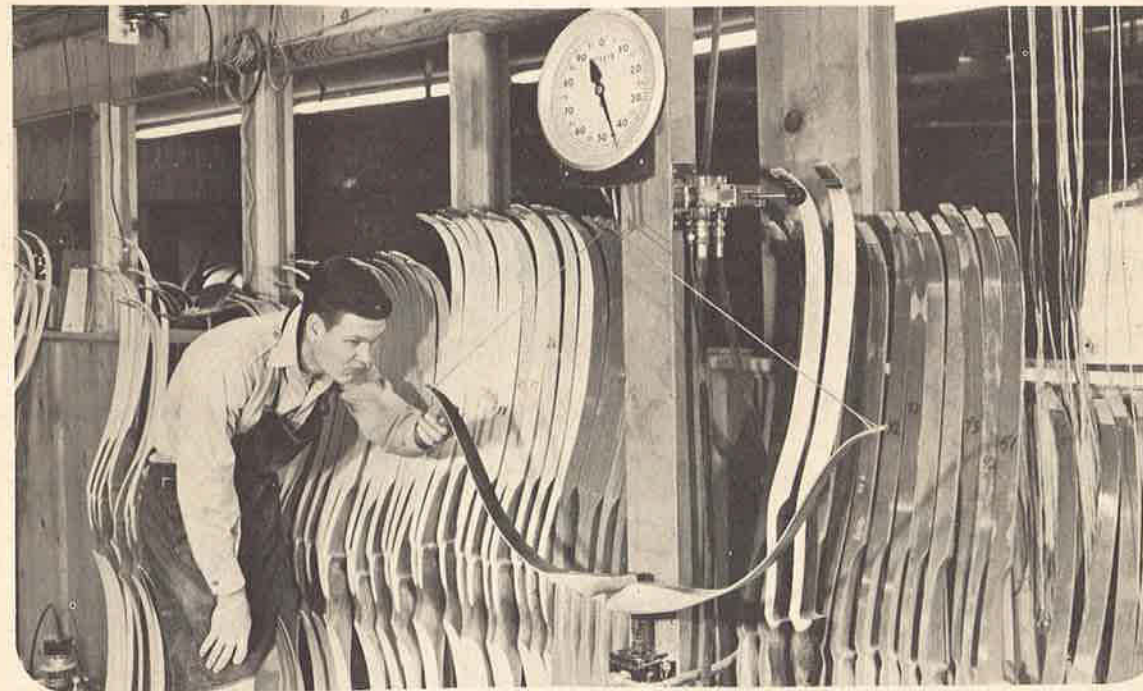
(Continued on page 61)



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COMPLETE FIELD GUIDE TO AMERICAN WILDLIFE by Henry Hill Collins, Jr., 683 pp., \$6.95. Published by Harper & Row. There is no doubt that this is a scholarly work and was meant to be just that. Generally speaking, it covers every species of bird, mammal, reptile and amphibian, food and game fish that occur regularly in the United States and Canada east of the Rocky Mountains and north of the Carolinas and Oklahoma — although not necessarily in that order.

Some idea of the degree of labor that went into its preparation is reflected, too, in the fact that there are more than 2000 illustrations and maps designed especially for this book. Some 700 species are pictured in full color.

THE COMPLETE BOOK OF ARCHERY by Robert Gannon: Coward-McCann, \$4.95, 256 pp.

In early chapters, as it should be, the author discusses the basic needs in the type of equipment needed by the beginner as well as that favored by the experienced archer. As the book progresses, the information becomes increasingly aimed toward the individual who is progressing in form, competence et al.

There are complete sections on field and target archery, tournaments, strings and stringing, and useful tips on how to avoid the more common shooting problems.

THE YOUNG SPORTSMAN'S GUIDE TO ARCHERY by G. Howard Gillean. Thomas Nelson & Sons; \$2.50; 96 pp.

This thin volume is put together in eight easy-to-read chapters that will give the young or beginning archer full insight into the sporting aspects of the bow and arrow.

PROFESSIONAL AND AMATEUR ARCHERY TOURNAMENT AND HUNTING INSTRUCTIONS AND ENCYCLOPEDIA by George Leonard Herter and Russell Hofmeister; Herter's, Incorporated, Waseca, Minnesota; \$2.57; 288 pp., with 263 illustrations and photos.

THE BIG GAME ANIMALS OF NORTH AMERICA by Jack O'Conner. Published by Outdoor Life and E.P. Dutton & Company; \$10; 264 pages.

O'Conner discusses his hunting exploits with his usual relaxed style and good humor.

And nothing seems to have been left out; in these pages, the author takes us from the glaciers of the Yukon on a Dall sheep hunt to the jungles of Southern Mexico, where he hunted jaguar. In between, he discusses at length another twenty animals in the big game category and all of them native to this continent.

It's a top book, whether it's for your own hunting reference shelf or it's an educational project for the kids.

MAIL POUCH
(Continued from page 58)

tured for at least twelve years by its inventor or patent holder, George Stevens of Huntsville, Arkansas. It is available in a custom model for \$75 or the factory production model at about \$40. Many repeating crossbows are made by devotees of the sport.

I suggest you attend an archery meeting sometime and take note of the lack of crossbow shooters. Or if there should happen to be a few crossbow shooters, take a good look at the bows they have constructed or purchased. You cannot find anything to compare with the artistry in wood in the straight stick the longbowmen use.

Gilford Millard,
Whitehall, Ohio

(We seemingly were wrong on the matter of the repeating crossbow, but as Mr. Millard indicates, there aren't too many crossbow shooters around. In spite of the fact that we have been complimented on the amount of crossbow coverage we have printed in the past, there is that contingent that continues to insist that crossbow shooting is not archery.)

(And there is a reason why Mr. Millard is so rabid on the subject. He is the present men's Ohio State Crossbow champ; his wife holds the distinction in the women's class, while his son, David, is the junior champion. In addition to this family, we understand there are a few other crossbow fanciers in Ohio.)

HYPPO ARROW

A word or few on Dan Quillan's *Hypo Arrow: Boom Or Bust?* (March-April 65 B&A) — I am prejudiced against it. I love to hunt with bow and arrow and hope hunting laws always give me a choice of arrowheads to use.

And if I were Quillan, I would bet the drug used in the hypo arrow is harmless to the one consuming the flesh. I have read many articles on drugs that were thought harmless, then later discovered to be quite dangerous.

Any game that has been poisoned to death, I don't want in my body. Dan can have my share. If he wants pink meat, he can wash it in water until it turns pink, and if he keeps on washing, it will turn white, but then where is the taste?

Game is palatable because of the blood it still contains after it supposedly has been drained.

James K. Cable, Jr.,
St. Mary's, Ohio

(Included in this issue is a rebuttal to Dan Quillan's article. The original article was presented in the light of a pro-and-con piece, and our mail is beginning to reflect the feelings of our readers.)

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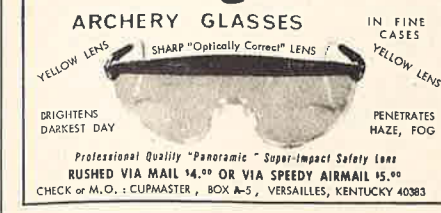


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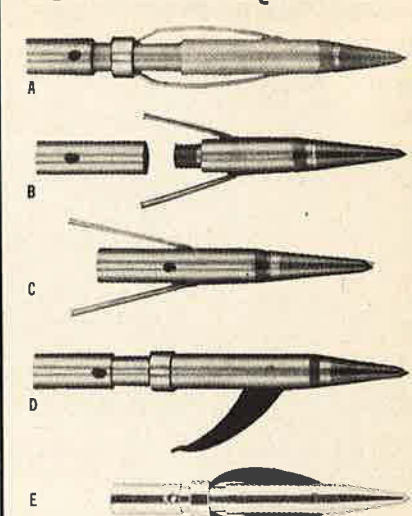
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NEW GUIDE TO BETTER ARCHERY, Second Edition, Revised and Enlarged by Thomas A. Forbes. This is an authoritative reference which deals with all phases of archery from how to select a bow to how to stage a tournament, including interesting chapters on bowhunting and woodcraft. Containing 343 pages, there are some 68 line illustrations by Ned Smith. A must for the serious archer. \$5.50.

MODERN BOWHUNTING by Hiram J. Grogan. Here is a book that is loaded with practical information; the kind you can use in the field. In the text, the author uses his own experiences to illustrate his various successes in hunting everything from crows to alligators, not to mention deer. Information on special equipment and advanced techniques for various game are spelled out. Contains 163 pages, center section of exciting hunting photos. \$4.75.

BUCKS AND BOWS by Walter Perry. The author is an ardent and successful deer hunter as well as an enthusiastic target archer. As suggested by the title, this book is devoted exclusively to hunting of deer with bow and arrow, and it includes full information on types of tackle, as well as best ways and means of downing your buck. Has 223 pages, 72 illustrations by author and Edward B. Hagey Jr. \$4.95.

LIVING OFF THE COUNTRY by Bradford Angier. This book has all of the information needed for staying alive in the woods, whether you be survival buff or simply the hunter who wants to be prepared against the possibility of being lost or running out of food. The information is practical and tried by the author and others. Contains 241 pages with humorous practical illustrations. \$5.00.

ALL ABOUT CAMPING by W. K. Merrill, U.S. Park Ranger. This book covers the field with facts and sage advice on every possibility from trailer camping through survival, touching on safety and first aid. It is certain to make your trip happier, safer, and more interesting. Has 262 pages, over 100 illustrations. \$3.95.

WILDERNESS COOKERY by Bradford Angier. Here's an amusingly written book that reads unlike any volume of recipes you've ever seen. It's based upon the author's personal experiences in living in the woods, attempting to improve upon cookery of the old frontiersmen. However, all of the recipes make extremely edible fixings. It fills 256 pages with many helpful illustrations. \$3.95.

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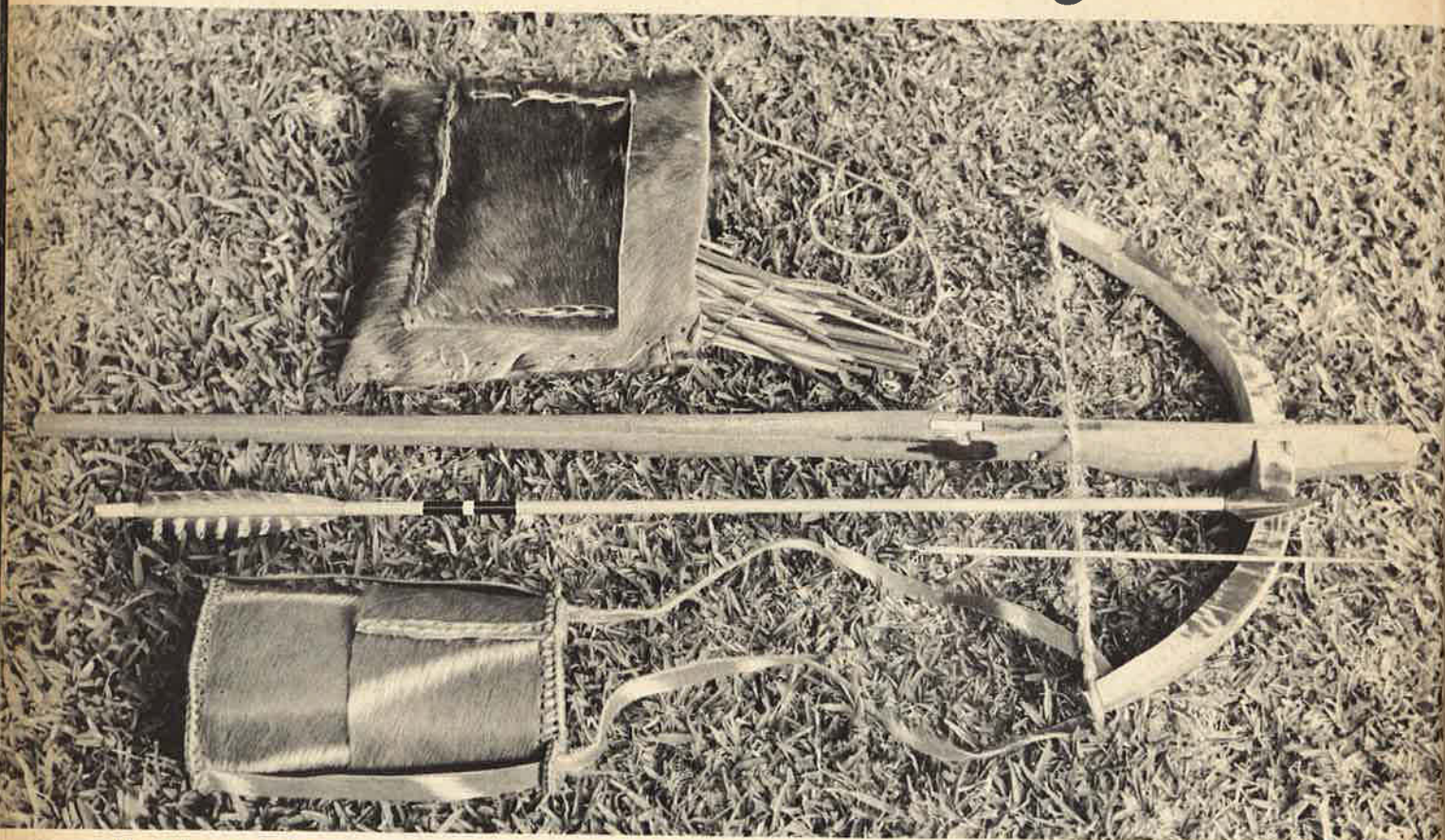
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By Elgin Gates

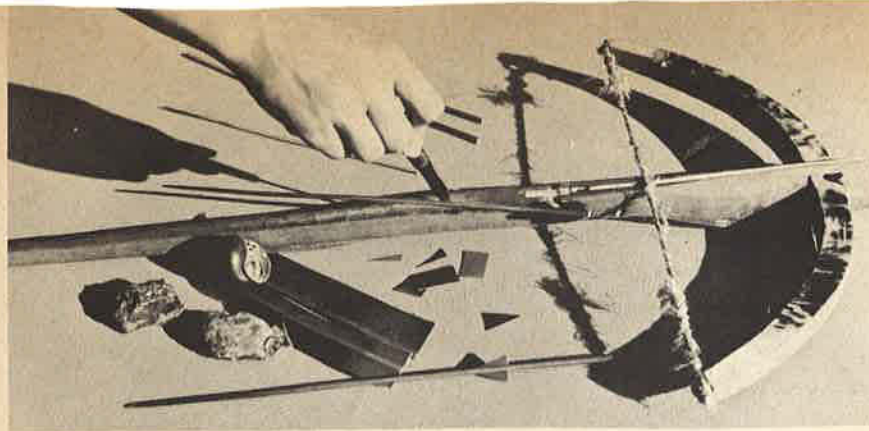
THE jungle water hole was silent. From our position in the tree, we could see anything that came into the clearing. A variety of jungle creatures already had come to drink during the hour we had been there but we only watched and let them go. We were waiting for that elusive red ghost of the forest, the bongo; an animal so rare that only dedicated big game hunters have ever heard of it and only a handful have bagged one.

Unknown to us, other hunters were watching for game, too, and their quarry had just come out of the heavy jungle growth almost directly beneath our tree. It was a tiny red forest duiker, a miniature antelope that stands only fourteen inches high at the shoulder when fully grown. The animal below us was a male, for I could see his tiny horns which were about three inches in length.

Stealthily and with infinite caution, he advanced into the clearing, picking his way through the deep elephant and buffalo tracks in the soft mud at the edge of the water, stopping often to look for danger. Satisfied finally that all was well, he lowered his head to drink.

But all was not well. There was a sharp *snick* and before my startled eyes, the duiker made a convulsive leap back from the edge of the water and landed on his side. Struggling to his feet he tried to run but only went in a circle and fell down again, his legs kicking.

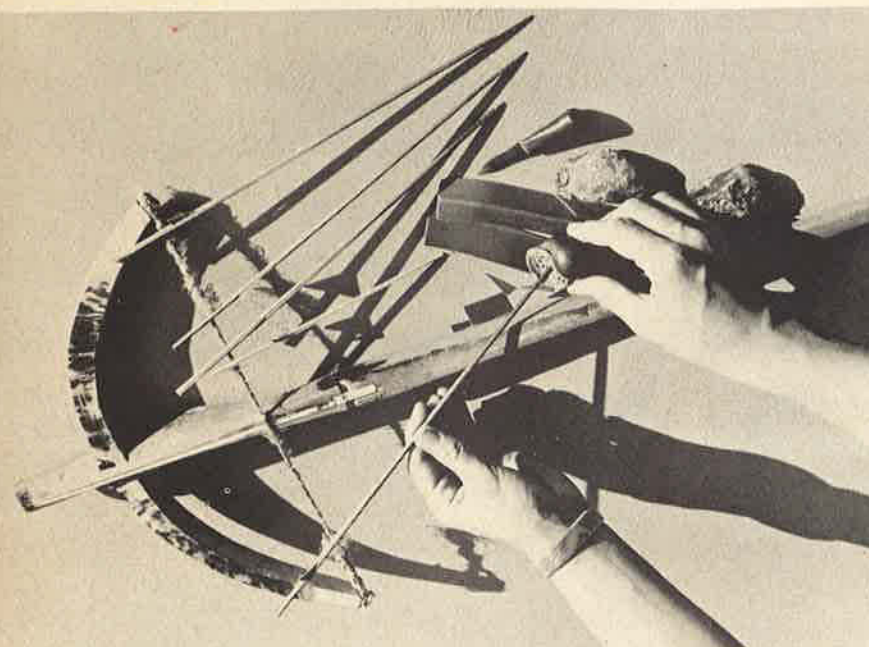
I turned to the French white hunter at my side



Left: Arrow is split with a knife so that a leaf can be inserted as fletching. Arrow at bottom already has been prepared in this manner. Bits of leaf have been cut for this use.

Lower left: Tip of bamboo arrow is dipped into the poison which is contained in snail shell. Pigmies poison only a few of arrows at a time.

Below: This group of pigmies came into author's camp one night. French white hunter is at lower left, the French plantation owner beside him.



with a question, but wise to the lore of the jungle he already knew what had happened.

"Pigmies," he said, pointing, "they are coming to get the duiker."

I looked back to see the last of three little men come down out of a tree across the clearing. They ran over to the still quivering duiker, chattering to each other. As they squatted around it, I saw that one of them was carrying a tiny crossbow. That was the answer. The sound we had heard was the string of the crossbow being released.

With this interruption, there was no chance that a bongo would come to the water hole now, so I suggested to the French hunter that we descend from the tree. Our perch was uncomfortable and besides, I was filled with curiosity to get a close look at the pigmy crossbow.

The hunter called to them in their own tongue. Startled, they snatched up the duiker and ran for the forest on the opposite side of the water hole, but a sharp exclamation from the hunter brought them to a halt. We climbed down from our tree and the hunter conversed with them. At my urging, he persuaded the owner of the crossbow to let me examine it.

Pigmies they were, but money they understood, for when I expressed a desire to buy the crossbow, the hunter haggled with them for a while and for about two dollars worth of French Equatorial African francs, I got the bow, the quiver full of arrows and a carrying case with the rest of the gear in it.

To further satisfy my curiosity, I had the former owner fully demonstrate the exact use of everything and finally shot a few arrows myself to make sure I could handle it. As a crossbow, it was one of the most interesting examples of archery equipment I've ever seen. As a weapon it was dainty, but deadly.

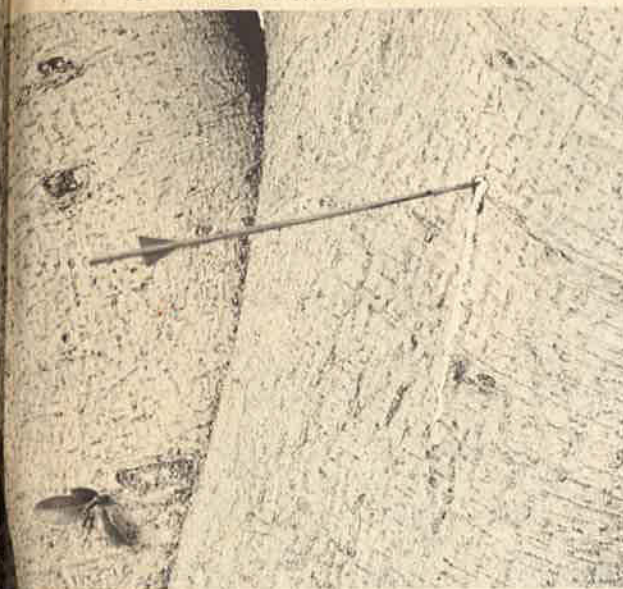
The arrows are nothing more than slivers of split bamboo an eighth of an inch in diameter and ten to twelve inches in length. They are tapered to a point at one end and cut at an angle at the butt end. In this condition, they are semi-finished and about fifty were tied in a bundle with leaves wrapped around the tips and were carried in the duiker skin quiver. Since the arrows are used with poison, only about four or five are prepared in advance just before the hunt is to begin and are carried in the small side pocket of the quiver.

The little round case was fashioned from bongo skin and was sort of a carry-all. It contained a tiny knife, a snail shell full of sticky poison, two lumps of tree resin called *copal*, several strips of tough leaf, a porcupine quill and a small hank of strong fiber. There was a jumble of other items in the case, including a comb of fresh honey wrapped in leaves. I wanted only those items that were part of the crossbow equipment and the rest were returned to the pigmy.

With the hunter interpreting, I asked the pigmy to show me how he prepared the arrows. Using the stock of the crossbow as sort of a miniature work bench for all operations, he first cut several triangular pieces out



Left: Author's son holds crude pigmy crossbow to shoulder, ready to shoot. Below: Arrow is shot into a rubber tree to illustrate its effectiveness.



From left: Duiker skin quiver, while against side pocket of quiver are porcupine quill, two lumps of copal, tiny knife and snail shell to hold poison. One bundle of arrows is wrapped in leaves, while other is free. Bongo skin case at right is to carry equipment listed above.



Pigmy poses with the duiker he shot with the crossbow illustrated in this article. Author, who witnessed the shot, found death by poison to be almost instantaneous.

of the strips of leaf. They were about an inch-and-a-half long and an inch wide at the broad end. He then pulled an arrow out of the bundle and laying it on the stock of the crossbow he pushed the point of the knife through the center of the arrow about two inches from the butt end. Being careful not to split the shaft open all the way to the end he worked the knife towards the tip, increasing the length of the "split" to about an inch and a half. He inserted one of the triangles of leaf in the split and when it was correctly positioned he withdrew the knife blade. The tough springy bamboo closed on the leaf and clamped it firmly in place. His movements were deft and effortless, and after four or five arrows were fletched, he cut the butts off square, then dipped the tips one at a time into the poison contained in the snail shell. Taking strands of threadlike fiber from the small hank, he proceeded to wrap them around the tips in a spiral to help hold the poison in place. The arrows now were ready to shoot.

The crossbow, itself, was an amazing little weapon. The stock appeared to be made from some kind of mahogany and the bow was cut from a tough, springy wood I could not identify. The string was made from the same twisted fiber as that in the hank and was a quarter-inch in diameter. When I placed the end of the stock against the ground, it took my full weight and strength to force the string into the retaining notch. The little pigmy cocked it by holding the bow in both hands in a sitting position and pushing the string with both feet. My guess is that the pull is something over seventy-five pounds.

Notches cut in the front of the stock contained a small quantity of melted copal, which was about the consistency of beeswax. Pinching off a bit of this, the pigmy pressed it into the arrow groove just ahead of the string. Laying an arrow into the groove with the end of the butt on top of the copal, he pressed it down firmly with his thumb. The copal held the arrow firm-

ly in place no matter how the bow was held or turned. I've since weighed some of the arrows which average about 25 grains. Because of their light weight and the strength of the crossbow, the velocity and trajectory are amazing. It is virtually impossible to follow their flight with the eye.

I had shot several arrows into a big tree about fifty yards away and had just shot again when there was a hiss from one of the pygmies. "Macaco!" he exclaimed, pointing into the trees behind us.

I looked and saw the branches moving. "What is it?" I asked the French hunter.

"Monkeys," he said. "There is a whole troop of them coming to the water hole."

Even as he spoke, the former owner of the crossbow was plucking at my arm and jabbering excitedly, gesturing with the fresh arrows he had prepared while I was shooting at the tree.

"He wants to shoot some monkeys," translated the hunter, "and he's asking if you will let him use the bow."

I passed it over and in about five seconds, he had it cocked and an arrow in place. Running over under the tree, he pointed the bow up, took momentary aim and shot. There was a howl from the tree and a great screeching from the other monkeys who converged on the one that had been shot. The pigmy quickly shot a second arrow then a third and a fourth. There were more howls and the whole troop fled screaming through the tree tops.

In a minute or two, one monkey came plummeting down, and as the poison took effect, two more tumbled out of the trees. I was dumbfounded. Three monkeys with four arrows, not to mention the duiker. This was unbelievable shooting in anybody's language.

The three pygmies picked the monkeys up and came over to where we were standing. With a sort of see-what-I-did grin, the marksman handed the little crossbow back to me.

The little crossbow is still in my possession along with the rest of the gear and every time I look at it, I remember what I saw that day at a jungle water hole in the French Congo. Like a child's toy it is a dainty little thing; dainty — but deadly.●

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books for bowmen



FIELD ARCHERY AND BOWHUNTING by Arnold O. Haugen and Harlan G. Metcalf; Ronald Press; \$5.50; 213 pp. This book answers a long felt need. Its practical information on field archery and bowhunting supplies the answers to the needs of the novice, increases the awareness of the advanced archer, and can prove an important reference for all who teach or coach this sport in any of its phases.

Shooting techniques are clearly presented to help the reader acquire skill in general archery as well as in successful bowhunting. The drastic changes in archery tackle in the past decade make the chapter on equipment vital for adequate and intelligent ordering for schools, camps and the individual. Also included are teaching aids and suggested plans for twenty-five lessons for bare bow field archery.

It is not surprising that this information-packed volume has a semi-scholastic approach. Dr. Harlan Metcalf, one of the authors, is head of Recreation Education at New York University, while the other, Dr. Arnold Haugen, is professor of zoology at Iowa State University and a biologist for the U.S. Bureau of Sport Fisheries and Wildlife; he has been a national figure in recent years in the field of game conservation.

Included in the text is a comprehensive description of the pre-draw gap system, which has been shown to be a workable short cut in learning bare bow or instinctive shooting for bowhunting or field archery.

The authors, both of whom have been involved in archery for the past three decades or so, present an accurate and interesting account of the development of modern day archery. The book contains a wealth of technical information to improve shooting, as well as general information to make the sport of interest to the potential archer. — MH.



BETTER WAYS OF PATHFINDING by Robert S. Owendoff; The Stackpole Company; \$2.95; 96 pp. If you're looking for a book with a lot of expensive illustrations and the text prepared with Dobie Gillis type humor, this isn't it.

As the author points out in his preface, "this is a practical book for the person who enjoys the great outdoors. Its purpose is to help him achieve greater satisfaction by learning how to find his way in unfamiliar areas. It was not written to entertain; I have no fund of personal anecdotes to lighten the presentation of the important subject of pathfinding."

However, Owendoff had done a good deal of research and drawn upon his own experience in the field and forest, as well as from other noted outdoorsmen, in preparing this method of land navigation, which can help one find his way in unfamiliar country.

Anyone who ever has been lost in a strange forest or in unfamiliar mountains is fully aware of the problems . . . and the requirements for returning unscathed. But this book is meant to be a tool in avoiding such happenings. The author tells in seven chapters exactly what one must do. He explains the use of a map, the compass, and how to handle both, at the same time clearing up some erroneous information that has been popularly disseminated in the past through legend.

Lengthy chapters tell of ways of using the sun, the moon and the stars, and how to make an improvised navigator if you do not have other materials at hand. All in all, it is complete. —MH.

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