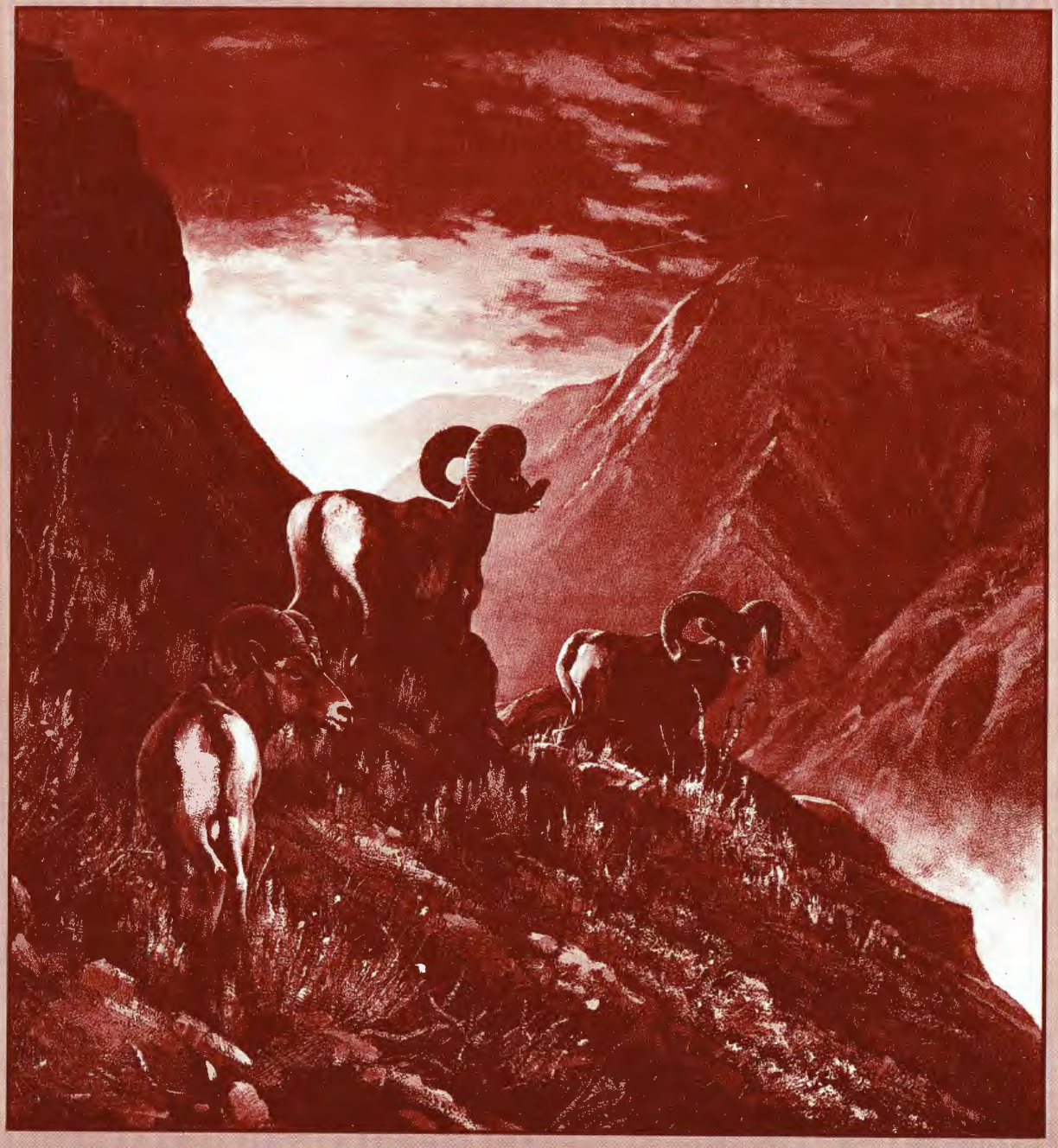
CALIFORNIA DESERT BIGHORN SHEEP
A GUIDEBOOK FOR THE HUNTER



COMPILED AND PUBLISHED BY
THE SOCIETY FOR THE CONSERVATION
OF BIGHORN SHEEP

FOREWORD

This book is intended for those hunters who are lucky enough to have drawn a permit for the California Desert Bighorn Sheep hunt. (Although its contents will also prove useful to biologists and other professionals.)

Although a tag may have been drawn, some of you know very little of our California Desert Bighorn and its history, management etc. It is hoped that this book, although limited in scope, will give the average hunter an insight into this magnificent animal. I have purposely left out any hunting regulations or descriptions of legal rams as that information can be obtained in each year's hunting regulations printed by Fish and Game.

I saw my first bighorn sheep in the early 1960's in Anza Borrego State Park and worked on a census in Death Valley in 1972. It was not until I met Dr. Loren Lutz in the early 80's that I again became interested in the plight of the bighorn. Dr. Lutz started the Society for the Conservation of Bighorn Sheep with several other concerned individuals in the 60's. The Sheep Society is an excellent vehicle for providing habitat improvement, etc. for the California Bighorn Sheep and I strongly urge each and every one of you to join the Society.

A hunter's contribution to wildlife can no longer be limited to purchasing a tag and license. Hunters need to make a more concerted effort by joining groups such as the Society for the Conservation of Bighorn Sheep.

I wish to thank the contributors to this pamphlet; Dr. Loren Lutz, lifelong conservationist, Committee Chairman B.L.M. Council, noted sheep hunter and Guide, and owner of Elk Track Ranch outfitters in Jackson Hole, Wyoming, Vernon C. Bleich, Associate Wildlife Biologist with the California Department of Fish and Game and an ardent sheep lover and supporter (Vern is currently working on his doctorate) and finally Tom Radoumis of Dejons Taxidermy studio in San Gabriel, California.

Finally, I wish to thank my wife, Mary, for putting up with all my sheep and hunting "papers" and my hunting trips.

Good luck on your hunt!

Britt W. Wilson, Editor
Los Angeles, California
1988

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"Spots"

A famous Desert Bighorn Sheep
Photo courtesy Dr. Loren L. Lutz

DISTRIBUTION AND EARLY HISTORY OF MOUNTAIN SHEEP IN CALIFORNIA

By Vernon C. Bleich

Mountain sheep are found primarily in southeastern California in Mojave and Sonoran desert mountain ranges. They also occur in five populations, totaling about 300 individuals, in the eastern Sierra Nevada, and in three populations totaling about 900 individuals in the transverse ranges of Ventura, Los Angeles, and San Bernardino counties.

Three subspecies of mountain sheep are found in California: Ovis canadensis nelsoni, found in the Transverse Ranges, through the Mohave Desert and in the eastern portion of the Sonoran Desert; O. c. cremnobates, found in the westernmost portion of the Sonoran Desert, in western Imperial, central Riverside, and eastern San Diego counties; and O. c. californiana, found only in the eastern Sierra Nevada, but historically also in northeastern California. Together, individuals of these subspecies number about 4,800 animals. O. c. nelsoni is most common, numbering about 3,800, O. c. cremnobates numbers about 700, and O. c. californiana numbers about 300.

Historically, mountain sheep were more numerous. A reasonable estimate is probably about 10,000 individuals at the turn of the 18th century. These animals were distributed among approximately 100 populations at that time; currently, some 59 extant populations occur in California, distributed among 49 mountain ranges. Because some larger mountain ranges contain multiple populations, based distinct ranges of ewes, there are more populations than there are mountain ranges supporting this species.

The downward trend in mountain sheep numbers began with the influx of gold miners and others in about 1850. Unregulated market hunting and subsistence hunting probably were early decimating factors, but then were followed by a more significant factor: the grazing of domestic livestock and the disease organisms they introduced to native mountain sheep.

In the several decades following the discovery of gold in California, several populations in the Sierra Nevadas were extirpated, likely as a result of diseases contracted from domestic sheep which were grazed in that mountain range. The obvious dissemination of wildlife populations in California seems to have resulted in the first legal protection for mountain sheep and other big game species. At that time, it was believed that wildlife populations protected from hunting would flourish and recolonize from ranges. Thus in 1872, the California legislature passed a law protecting elk, pronghorn, and deer for eight months of the year. In 1878, the Legislature further amended the Act to establish a four-year moratorium on the taking of any elk, pronghorn, mountain sheep or female deer. In 1883, the moratorium on taking of mountain sheep was extended indefinitely.

Despite the well-intentioned efforts of the California Legislature, full protection did not stop the decline of mountain sheep in California. Populations continued to disappear through the end of the last century, prior to effective enforcement of the fully protected status (which began in about 1920), and have continued to be lost right up to the present, despite an effective enforcement program.

A minimum of 45 populations has been lost in California since 1850. About 30% of the populations existing in 1920 have been lost and about 50% of the total populations lost since 1850 have disappeared since 1920! Because 1920 is approximately midway between the beginning of the California Gold Rush and the present, those figures strongly suggest that the rate of population loss dropped little, if any, beginning with the enforcement of full protection in about 1920.

The continuing loss of populations indicates that Legislative protection did not affect those factors responsible for the extirpation of mountain sheep in many areas of California. The early establishment of full protection likely founded on two (false) assumptions: (1) that overhunting was the primary problem, and (2) that recolonization of vacant habitats would quickly follow recovery of those protected populations. The latter premise was based on a general misconception that Mountain Sheep would be good colonizers; such is not the case. The former failed to recognize other adverse effects, such as the impacts of domestic livestock (especially through the impacts of introduced diseases), or the effect of habitat loss and alteration. Because losses to the gun were known to occur, full protection of the animals themselves likely was the only management strategy obvious at the time.

Early management continued to focus on total protection for many years, and included the establishment of Game Refugee 4D in the Santa Rosa Mountains in 1917, and the creation of two Bighorn Sheep Zoological areas in the Eastern Sierra Nevadas during the 1970's. These latter areas established on the assumption that human disturbance may be adversely impacting populations of O. c. californiana.

During the 1970's, the California Legislature enacted the California Endangered Species Act, and two subspecies, O. c. californiana and O. c. cremnobates were afforded threatened status by the Fish and Game Commission. Recommendations were made for the development and implementation of recovery plans for each subspecies, which included the protection of critical habitat for the latter, and reintroduction of the former to historically occupied areas.

There have been several legislative attempts to change the status of mountain sheep back to that of a game animal. One such attempt in 1922, Senate Bill 527, proposed an open season with a $100 license fee and tag system. This legislation was strongly opposed, in part because $100 was a steep fee, and would cater to only a privileged few.

opposed, in part because $100 was a steep fee, and would cater to only a privileged few.

In 1979, Senate Bill 833 proposed making the Nelson subspecies a game animal, while maintaining fully protected status (and threatened status, under the California Endangered Species Act) for the other two subspecies; that proposed legislation was defeated. In 1983, Assembly Bill 1548 proposed the same changes as had Senate Bill 833 but, in addition, called for a statewide study of population status, competition, diseases, and reintroduction needs, in accordance with the study plan prepared by the Department of Fish and Game in response to Assembly Concurrent Resolution 41 in 1981. Assembly Bill 1548 Passed the Assembly, but later died in a Senate Committee. The Legislature instead allocated moneys from California Environmental License Plate funds for the studies called for in that legislation.

Assembly Bill 3117 became law in 1986, and made mountain sheep inhabiting Old Dad Peak and the Marble Mountains game animals while retaining fully protected status for all other populations. Both the Old Dad Peak and Marble Mountains populations had served as major sources of translocation stock, and the choice of these populations circumvented arguments that limited sport hunting would jeopardize those populations. Additionally, Assembly Bill 3117 provided for one tag to be made available for fund raising purposes each year, and also set a low limit on the number of permits that could be offered, not to exceed 15% of the native rams counted annually in each population. Finally, that legislation is of limited direction, and will expire on January 1, 1993, unless it is extended by the Legislature. Thus, Assembly Bill 3117 was viewed somewhat as an experiment.

California Desert Bighorn Rams
Photo by Gary Swanson

MODERN MANAGEMENT OF MOUNTAIN SHEEP IN CALIFORNIA

By Vernon C. Bleich

Although the Department of Fish and Game supported an active, ongoing desert water development program for many years, the "modern management" of mountain sheep in California really began with the passage of Senate Resolution 43 in 1963. Until that time, basic inventory data consisted of cursory statewide surveys which occurred in 1940, 1946 and 1957.

Senate Resolution 43 resulted in the most detailed statewide survey ever conducted, and funding was provided for a field team to conduct this survey over a number of years; Dick Weaver was the project leader. Input from interested sportsmen's groups, notably the Southern Council of Conservation Clubs and the Society for the Conservation of Bighorn Sheep, was instrumental in the passage of Senate Resolution 43.

Results of the statewide inventory conducted from 1968-1972 yielded a population estimate of 3,700 mountain sheep in California; more importantly, however, was the fact that for the first time ever the management needs of mountain sheep, including land-use conflicts, water developments, and reintroductions, were addressed.

This survey resulted in the conception of the Volunteer Desert Water and Wildlife Survey, an informal organization of volunteers founded largely as a result of a series of meetings between the Southern Council of Conservation Clubs, the Society for the Conservation of Bighorn Sheep, and the Department of Fish and Game. The primary purpose of the survey was to help carry out the recommendations for water developments put forth by Dick Weaver as a result of his work, and to assist the Department with census efforts and other work related to mountain sheep and other desert wildlife. The survey has been a huge success and since 1970 volunteers have contributed hundreds of thousands of hours of labor to the program, resulting in dozens of major habitat improvement projects directed specifically at increasing mountain sheep populations. The survey continues and is a major factor in the Department's ongoing programs for desert wildlife.

The first effort to re-establish mountain sheep on historical range in California occurred at Lava Beds National Monument in 1971. Mountain sheep of the subspecies Ovis canadensis californiana were obtained from British Columbia, and placed in an enclosure at the Lava Beds. Despite some minor setbacks associated with a poaching incident and a minor disease problem, that population grew and flourished until 1980 when a major die-off occurred as a result of domestic sheep coming into contact with them. Just prior to the die-off, four sheep from the Lava Beds were translocated to the Warner Mountains in an effort to establish a population there; those sheep were supplemented in 1980 with 10 from the Mount Baxter herd in the Sierra Nevadas. That population flourished, exhibiting an average annual increase

of about 24% until 1988, when the entire population was lost to a disease outbreak, very likely associated with direct contact between the wild sheep and domestic sheep in the area.

In 1979, removals of animals (O. c. californiana) from the Mount Baxter herd in the Sierra Nevadas was initiated, and since that time a total of 104 animals have been removed, 92 of which have been used to re-stock three areas of that mountain range: Wheeler Ridge, Mount Langley and Lee Vining Canyon. These relocations took place in 1979, 1980, 1982, 1986 and 1988.

Translocation projects involving sheep (O. c. nelsoni) from two large Mojave Desert populations, Old Dad Peak and the Marble Mountains, have been ongoing since 1983. To date, 128 animals have been removed from Old Dad Peak for translocation to the Whipple Mountains, Sheephole Mountains, Eagle Crags and Argus Range. Fifty-seven animals have been removed the the Marble Mountains for translocation to the Whipple Mountains and the Eagle Crags.

By 1983 it had been determined that the populations of mountain sheep (O. c. nelsoni) on the San Gabriel Mountains was large enough to support removals for translocation, and in 1983, 1985 and 1987, a total of 64 animals were removed from winter ranges in the South Fork of Lytle Creek and in Cattle Canyon. These animals were translocated to a vacant, but historical, winter range in the Prairie Fork of of the San Gabriel River (within the San Gabriel Mountains), and to historical habitat near San Rafael Peak, in Ventura County. In 1988, eight sheep (O. c. nelsoni) were captured in Lone Tree Canyon of the White Mountains, Mono County, and translocated to Silver Canyon, also in the White Mountains, in Inyo County.

In total, since 1979 the Department of Fish and Game has attempted to re-establish eight new populations, and augment one very low population. Only the effort in the Warner Mountains has been unsuccessful, a result of the disease outbreak discussed above.

In 1981, Assembly Concurrent Resolution 41 was passed, and directed the Department of Fish and Game to prepare a study plan to investigate population status, competition, diseases, and reintroduction needs. Money was allocated from the California Environmental License Plate fund for the purpose of carrying out the investigations outlined by the Department's study plan, prepared in response to 1981 Assembly Concurrent Resolution 41.

In 1986, Assembly Bill 3117 became law, and comprises the most significant legislation to affect mountain sheep since the 1878 legislation which established the initial moratorium on the taking of mountain sheep. AB 3117 differed from previous legislation which would have authorized hunting (see Distribution and Early History of Mountain Sheep in California) in that (1) it proposed to make mountain sheep a game animal in only two area: Old Dad Peak and the Marble Mountains; (2) it provided for one sheep tag to be available for fund raising purposes each year, with the proceeds of all hunting sanctioned by the Bill to be put in an

account set aside only for the benefit of mountain sheep in California; (3) the legislation set a very low limit on the number of tags which could be offered each year, not to exceed 15% of mature rams counted annually in each population; and (4) the Bill was of limited duration and will expire January 1, 1993. Thus, the hunting program was viewed somewhat as an experiment.

Most significantly, AB 3117 contained language which directed the Department to prepare management plans for each population of mountain sheep in California. Ultimately, this will result in a major, pro-active management program for this species, and provide a mechanism to fund, at least in part, such a program. It also has made available to the sportsmen of California the opportunity to pursue one of the most sought after big game species in North America. In 1987, auction of the fund-raising tag brought $70,000, and a total of $93,000 was raised that year for the sheep management program. In 1988, the auction tag brought $59,000 and total receipts are not yet in.

The 1987 season produced nine rams (100% success) ranging in size from 153 to 169 Boone and Crockett points. Four of these were taken in the Marble Mountains, and five came from Old Dad Peak. The 1988 regulations provide for the issue of five tags at Old Dad Peak, three in the Marble Mountains, and one to be valid in either range.

The management of mountain sheep in California has come a remarkable way since 1968. Most significantly, the well established relocation program, as well as disease and ecological research funded through special funds have contributed substantially to the enhanced distribution and our knowledge of this species. With the passage AB 3117, California has become a leader in the field; it will be up to the Department of Fish and Game and the concerned sportsmen-conservationists of California to see that our program continues and that mountain sheep continue to benefit from it after 1991.

Loren L. Lutz Memorial Guzzler Water Development has been a major factor in increasing California's Sheep populations.

HUNTING DESERT BIGHORN SHEEP

By Dr. Loren L. Lutz

No other pursuit of big game has the romance of wild sheep hunting. The toughest challenge in North America is the bighorn, and of the various bighorns the desert races are the hardest to get a license for.

The dry, rugged expanse of country they live in offers an opportunity to challenge the stamina and thinking ability of the hunter like no other game. Mule deer, except for really old hunted bucks, are not noted for their sagacity, elk are experts at evasion, but sheep are really masters of the domain they live in. Their agility in the cliffs and rocks enable them to literally flow over ground that deer stumble in. Many times I've seen rams climb out of blind canyons when I was certain of their being trapped by precipitous cliffs.

However, the bighorn is takeable, and after some forty years of chasing wild sheep, I have developed some personal opinions on how to secure a desert sheep.

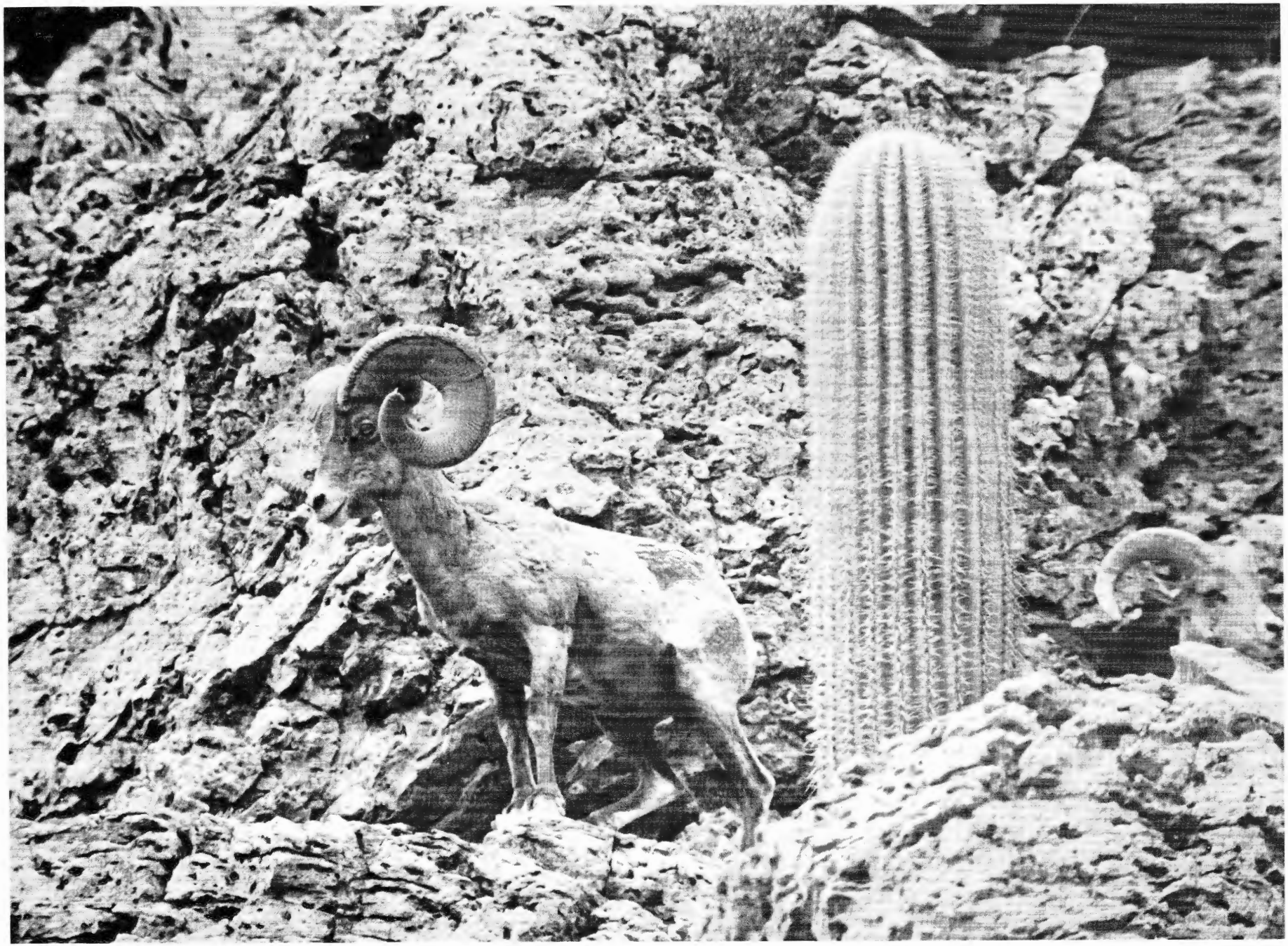
After obtaining the permit the easiest and smartest move is to hire a good professional outfitter who knows the country. This relieves one of many obligations: the acquisition of equipment and the myriad details of a hunting camp are not really suitable for the average busy guy or gal trying to wrest a living elsewhere. The expertise of a good guide comes from long experience and the accumulation of a lot of equipment and knowledge. Further, it's nice not to have to cook in the morning, prepare lunch and then cook the evening meal after a long and tiring day afield, not to mention washing the dishes!

Whether or not you hire an outfitter get in shape. If you ride a horse on the hunt, ride a lot beforehand to stop the agony of Charley horses, hitches in muscles that you won't believe, and blisters that match all too well saddle contact points.

O.K., so you want the experience of doing it yourself. First, if you are an experienced camper you need no advice. If you're not used to winter in the desert be prepared for snow, sleet, hail, rain, winds, and flash floods. Bring survival gear, good four-wheel drive equipment, rattlesnake medicine (yes, I've stepped on a rattler in the snow), lots of water, spare tires and tools, plus an extra battery for your truck. Be prepared to rough it.

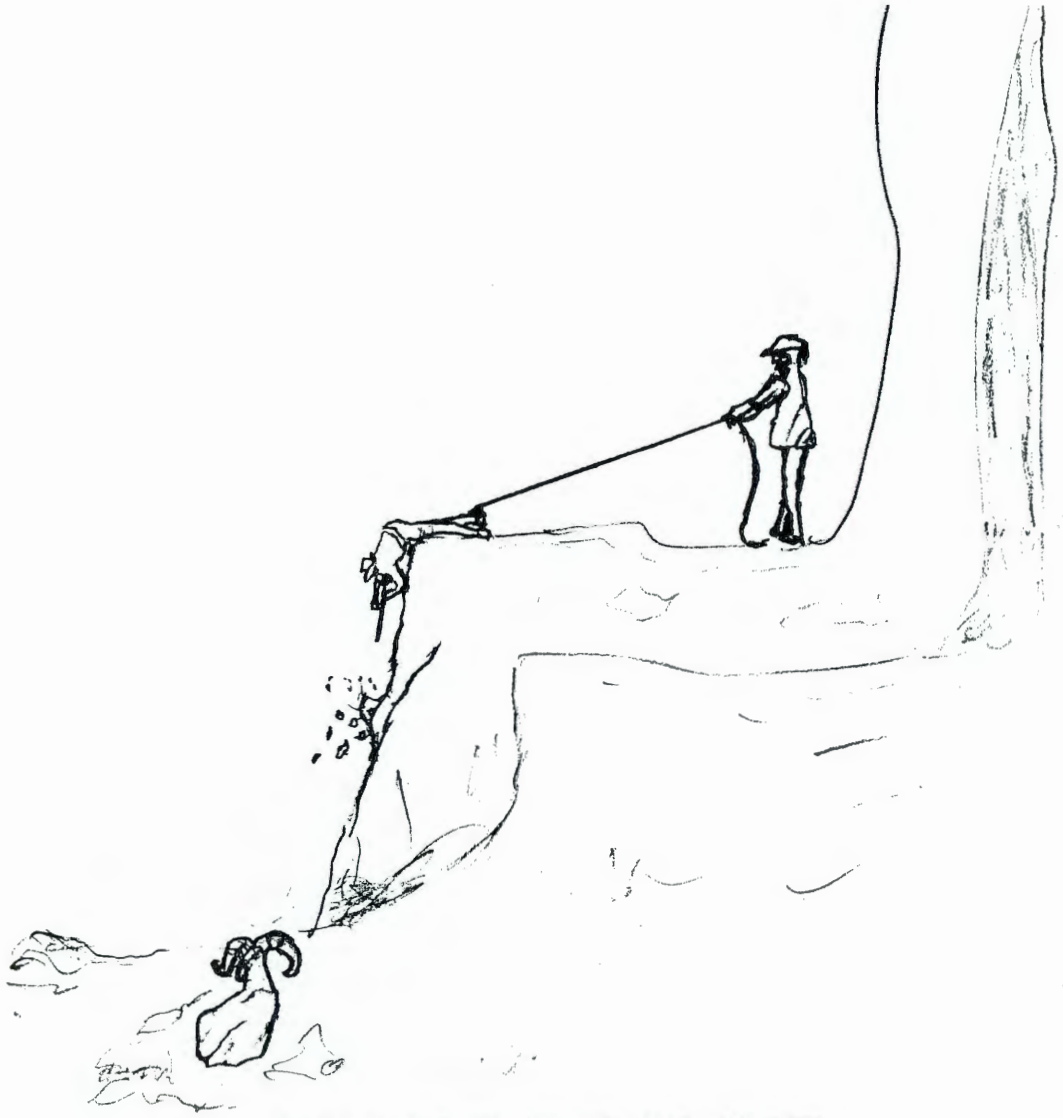
Do not stint on your glassware. Buy the best (generally the most expensive) pair of binoculars possible, 10x40 preferably, and the best spotting scope that money can buy.

Be prepared to spend hours glassing seemingly barren landscapes and then using the spotting scope to pinpoint the size, age, and other items of interest about the animal.



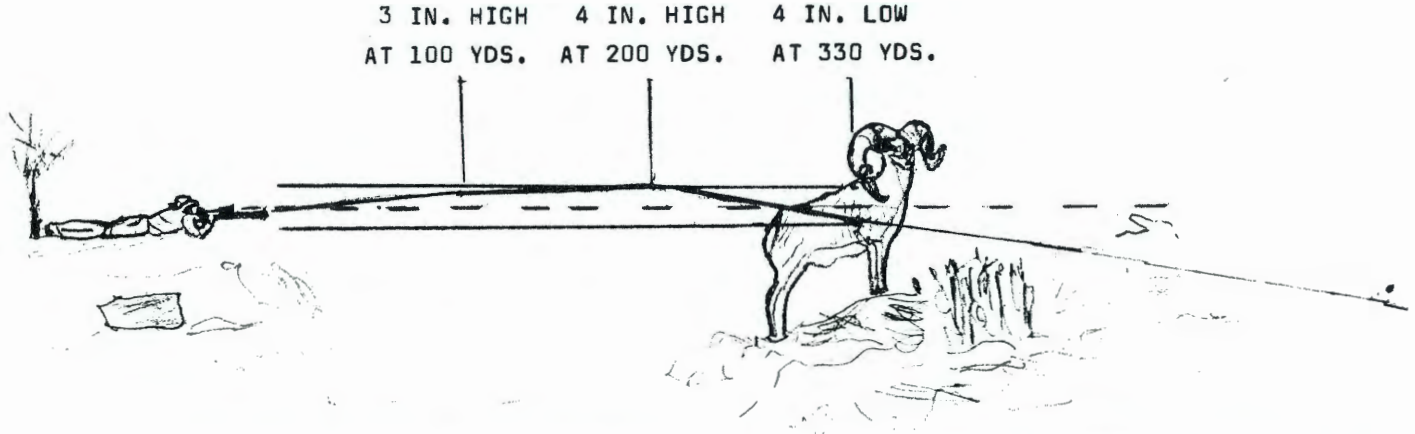
The Aravaipa Ram

Photo courtesy Bob Housholder (Arizona Game and Fish Dept.)



WHAT YOU SEE MAY NOT BE WHAT YOU GET!

POINT BLANK RANGE "TUNNEL SHOOTING"



160 GRAIN NOSLER PARTITION BULLET. 7 MM. 338 MAGNUM. 4831 POWDER FEDERAL 215 PRIMER WINCHESTER BRASS

Do not do any advance scouting of bighorn; it will make the rams clear out. Old rams are not tolerant of unusual activity.

Clothing. Outside of bringing layered clothing with you, I am opposed to contrasting colors such as white and black, and also fluorescent colors. If the law allows, don't go out in elk or rabbit hunting colors.

Do not ever lose your alertness. The big ram can show up unexpectedly when you're least ready.

Sheep are <u>not slow</u> and they don't waste time in putting open space between them and strange two-legged creatures. Generally, if I am on horseback I can get within decent rifle range of sheep, for they recognize four-legged animals of that size as not being inimical to their well-being.

People who have read too much and have romanticized the same amount think that big rams are found only in the tougher mountains. I hunt Rocky Mountain bighorns in the timber and desert rams in the rolling hills. I admit it's tougher, but that is where most of the big ones are.

Now it's entirely possible to shoot a sheep with a trusty iron-sighted 30.30. However, give yourself a break. Many articles have been written on various "sheep" calibers and the ultimate mountain rifle. My friend Harry Sanford and I designed and made two 6 1/2 pound (with scope) 7 mm-338 rifles for mountain hunting. We wanted too much: lightness, fire power for grizzles, and also flat shooting was just something that the guns wouldn't handle with accuracy, and we had a lot of shoulder bruising as well.

However, the minute we could get some 338 brass we made heavier 7mm 338's, and heavy as my gun is I carry it in preference to all others in North America. Well, sometimes I'll grab my favorite 270.

Flat shooting calibers like the various 6mm's on up through the 300's are good sheep guns, but the heavier bullet is an exercise that isn't necessary.

A gun that shoots a missile which has a point blank range of up to 300 yards will do quite nicely. For instance, my 7mm, loaded with a 160 Nosler backed with 70 grain of 4831 powder is 3 inches high at 100 yards, 4 inches high at 200 yards, on at 300 yards, and has a PBR of some 330 yards. In other words, on an animal the size of a sheep all I have to do to hit it is to hold steady and <u>squeeze</u> the trigger, after aiming it at an area right behind the point of the shoulder. I don't have to figure out the range up to 330 yards. It doesn't matter whether the ram is 30 yards, 200 yards, or 300 yards away.

So on these calibers the thing to remember is (1) have the point of impact 3 inches high at 100 yards and (2) know at what distance your particular bullet will fall four inches below your line of

Desert Bighorn Rams

TOP: Somewhat typical horn structure
MIDDLE: Converging horn structure
BOTTOM: Diverging horn structure

sight. This then is the maximum range at which you don't have to worry about holdover.

By doing this one is taking advantage of the ability of the gun. If for example you sight in at 100 yards you will have to guess-estimate the yardage for anything much over 200 yards, and you have lost the advantage of using modern firearms.

Sheep are not hard to kill, but a badly placed shot will cause a long chase and perhaps a lost animal. By preference I do use a two-part bullet like the Nosler partition. The sectional density of a bullet is important as is the ballistic coefficient. In other words, heavier bullets with points on the end are generally the projectile of choice.

Again, on optics put the best, most expensive scope possible on your gun and shoot it at the range until you get satisfactory groups. One inch at 100 yards is the goal, but two inches at 100 yards will do.

By preference I have always hunted with horses. On tough hunts I can cover forty miles in a day and still be able to climb when necessary. In areas of wilderness, walking in and then hunting is a rough way to go. Hunting sheep in the desert on horseback will give the hunter an added opportunity for hard-to-get-at rams. Whether you ride or walk, don't stint on your footwear. Vibram soled boots are still the best all around choice for clinging to terra firma in what can become a rock climbing expedition.

In California hunting areas, a surplus of aged rams exists so whether you walk or ride, stick to it with a positive attitude.

While wild sheep rely mostly on their superb eyesight, the equivalent of 8 power binoculars, their sense of smell will compete with that of any other finely tuned animal. The fact that they don't pay a lot of attention to falling rocks doesn't mean that they won't decamp on hearing the slightest whisper. That's another reason I use horses, which are equal with bighorn in the ability to see, hear, and smell. Many times my steed has pointed out wild animals to me by cocking its ears toward the object of curiosity. Sometimes with a good deal of intensive searching, binocular judgment generally confirmed its opinion.

Essentially rams have horns that are converging, diverging, or parallel in nature. Most of the sheep in the areas open to sheep hunting in California have parallel horns in the trophy rams. Most of them are also at least 3/4 curl in the trophy rams.

However, some heavily broomed old rams may have only half curls, thus are illegal. The other exception can be a less than 3/4 curl that is still a Boone and Crockett Club candidate. That is why you need a spotting scope of at least 25 power to evaluate a ram carefully.

How to stalk a ram. After viewing from a distance with a spotting scope - the hunter has decided that one particular animal deserves

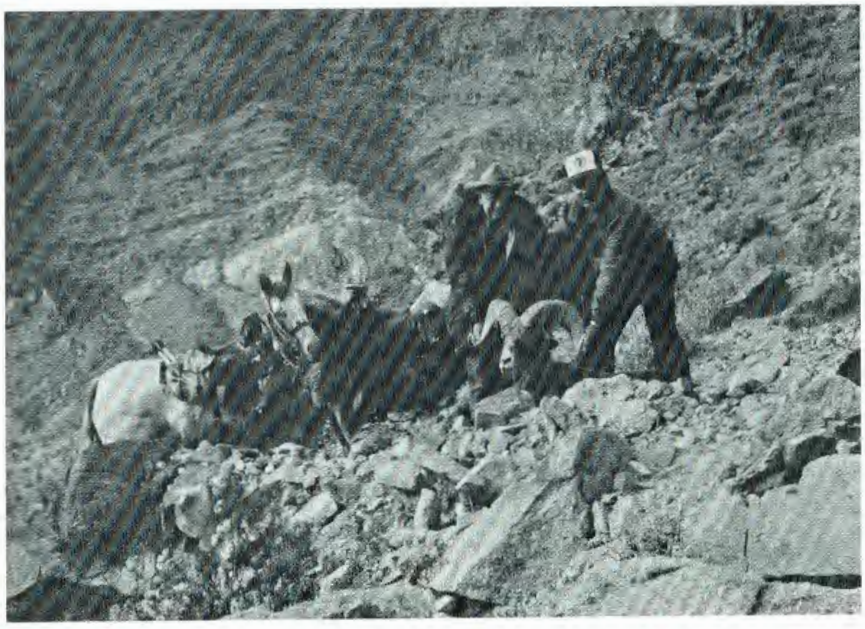
Looks can be deceiving. This ram taken by Dr. Earl Robert Hein is a Boone & Crockett Club record.

Under the 3/4 curl law is this a legal sheep?

Photo by Loren Lutz

Side view of John Moore's California Bighorn taken in 1987.

Photo by Loren Lutz



Sheep Guide Loren Lutz (L) and California hunter Bob Levett with Bob's ram. Note Old Dad Peak in background.

Although these 3 animals are Rocky Mountain Bighorns, they serve to show horn types quite well. Top photo by Brian Varty, bottom photo by Loren Lutz.

closer scrutiny and is perhaps the trophy he desires. Bearing in mind that sheep do have faculties that we don't possess to the same degree - hearing, smelling and seeing - we do have one advantage - the sometimes superior ability to think.

It is not too smart to stalk sheep from upwind. One has to remember that hot air rises and cold air descends. So as the sun warms up the air it will flow uphill and as the sun fades the air will be colder and heavier and it will flow downhill. Local errant, contrary conditions do exist, and the wind will change - so be on guard. Therefore, constantly check the wind.

Most knowledgeable sheep hunters try to stalk sheep from above and it is the smarter of several approaches. However, frequently it's nigh on to impossible and then you have to switch tactics. One method will help by selecting a route far removed from the ram initially, but one that will lead up a draw adjacent to and within shooting distance of the quarry. This may necessitate going directly away from the sheep, getting out of sight, cutting across country and approaching from a different direction.

Do not be misled by the casual disinterest to people of ewes, lambs and smaller rams. The big old boys have survived because of the learning experience and won't stand still for foolish mistakes on the part of the hunter.

In the search for a big sheep it is important to stay off the skyline. Silhouetted two legged creatures stand out like sore thumbs with a back drop of blue sky or hills.

Bighorn do hear the somewhat constant rolling of rocks and are not alarmed by the action. However, don't ever think that noise that's slightly different isn't registered. Foreign noises are picked up, accorded their position of importance, and the sheep act accordingly. For instance, talking is a very disturbing activity to sheep and they will vamoose.

With the superb eyesight, hearing and smell that sheep possess we need to exercise our superior thinking capacity and act accordingly. If you can see a sheep it undoubtedly has already seen you. If you're upwind, it has smelled you - the enemy. If you talk or make rude noises - it has heard you - so take advantage of the wind, be inconspicuous, if not out of sight and be quiet and not obtrusive.

Scoring live sheep by the Boone and Crockett Club method in the field is a little different than measuring them on a skull that you have in your hands.

It is very difficult to judge a ram from the back end. Older rams exhibit quite a massive horn structure when viewed from the rear. While it is very important to look for mass of horn, one must get a side view to judge the definite quality of an individual animal. It is the best way of seeing the relationship of the curve of the horn to the bottom of the lower jaw. A sheep with loose curling horns that go below the jawline and then rise up over the nose

will indeed be a trophy to consider. A tighter curl with the same mass will not score as high on points.

The first thing to look for is mass of horn from the front and side. If one has determined that (a) it is a legal 3/4 curl sheep and (b) it is of good quality, the next decision by the hunter is - does it meet my standards?

Rams that score well have 15" + bases, carry that mass forward to the 1/2 curl mark, carry the curl down below the lower jaw line with a horn protrusion about the nose and are of a mature age. Rams of this type will score from 180 points up.

I want to emphasize that the hunt itself is the reason and the trophy is a remembrance of why we choose this form of recreation.

There are at least two recognized forms of measurement - Boone and Crockett and Safari Club International. In both methods the longest horn is divided into quarters. In Boone and Crockett penalties are assessed for circumference differences but not length differences.

There is no penalty for any difference between left and right horns by the Safari Club International method of scoring.

All the circumference and horn lengths are added together for a total score in both methods. The difference in Boone and Crockett is that the various circumference differences are totaled and then subtracted for the final score.

May you have a balmy weather, blue skies, and a successful conclusion.

TROPHY CARE OF YOUR SHEEP

By Thomas J. Radoumis

As a hunter, I have always thought it my duty to know how to prepare the animals for mounting. As a taxidermist, I have always wondered how hunters could spend so much money and time on a hunt and not know how to take care of the game after it was done. Today, most big game hunting is done for sport and the final result usually will hang on the hunter's wall. In order for the taxidermist to do the kind of job he is paid for, certain requirements must be met in preparing the heads, or animals, beforehand. Since this booklet deals mainly with sheep, I will explain several methods of preparing your trophy for your taxidermist.

As in most cases in big game hunting, the shot is the most important first step in collecting a trophy. Unfortunately, many hunters prefer the neck shot so that can save meat. If this is your reason to take a neck shot, then don't plan on saving the trophy. The neck shot destroys the animal for mounting, or causes such damage that the taxidermist will have a difficult time repairing the damage you have done. In severe cases, you will be charged extra for the time and effort it takes to make the trophy worthwhile to hang on the wall. Whenever possible, take the heart or lung shot and do not cut the animal's throat after you reach the downed trophy. If you are planning to have a full mount done of your sheep, do the initial skinning on the spot so that you do not have to drag the animal and ruin the skin. Dragging will cause the hair to come out in large spots and make the trophy worthless for a full mount.

After you have downed your animal, the first thing I like to see a hunter do is take some measurements that can be used in the mounting of the animal. Whether it is a headmount or life size, measurements are useful and needed. Any good taxidermist will tell you that he prefers measurements of the actual animal and not have to guess. The measurements preferred on a headmount are simple and can be taken quickly. The first is from the nose to the eye (or where we would call the tear duct area); the second is from the nose to the base of the skull which give the length of the head; the third is the circumference of the neck at the base where the head meets the neck. These three measurements will tell a taxidermist just about all he needs to know about the headmount.

If you are planning a fullmount of the animal, the three measurements above are needed plus a measurement from the nose to the base of the tail (measured over the top of the animal), and the circumference of the belly in the largest spot before the animal has been dressed. There are other measurements that are more sophisticated but it is not necessary to go into these at this time. If you are able to get the measurements listed, you are doing fine.

I want to talk about three different methods of skinning trophies that are used today. Hopefully, I can convey the idea in a clear

manner so that few questions need to be asked. The first method will be caping the head just for a headmount, with the idea that you can reach a taxidermist within 24 hours.

Most animals have either a dark stripe down the back of their neck or somewhat of a mane. I like to have the skinner go six inches behind the front legs, make a cut completely around the body at this point, then make a cut from the top of the shoulders up the back of the neck to a spot between the horns. At this point, most make a "V" shape cut to each horn. I prefer a cut that looks like an upside-down "L." In other words, the bottom of the "L" is the cut from each horn across, then continues down the back of the neck. With this cut, the taxidermist will start sewing from one side of the horn across to the other, then right down the back of the neck until the skin is completely sewn. By making the circular cut around the body behind the legs, you will have enough of the brisket to work with to have a good, full shoulder mount. In many cases, plenty of backskin is left but not enough of the brisket. A circular cut needs to be made around each front leg. Then make a cut from the circular cut up the back of the leg until it meets the incision around the body. This will enable you to pull the skin forward to the base of the neck and remove the head from the body. In most cases, you will be near an area where you can reach a taxidermist to finish the skinning. I prefer not to have any of the skin salted unless it has been completely skinned. The weather is usually cold enough to hold a head for at least 24 hours which is enough time to take care of the necessary skinning for tanning preparation.

If you feel that you would like to do more than just cape the head, then you must take a sharp knife, lift the hair away from the horns and cut the skin away from the entire horn very carefully. Slowly skin forward, always pulling the skin away from the skull and cutting only the membrane that holds the skin to the flesh. When cutting the ears away from the skull, always leave the ear butts attached. Some skinners have a tendency to cut the ears too short which causes problems in the mounting process. When you come to the eye, you must stick your index finger into the eyelid are so that you can feel if you are cutting the skin properly. In this area, you must be careful not cut the eyelid, always pulling the skin away from the flesh. When the tear duct is reached, you must skin very carefully close to the skull to dig out the pocket that the tear duct rests in. After this is completed, then skin forward until you reach the mouth area, cutting, again very carefully, leaving the lips attached. I prefer skinning this area from the outside of the mouth making an incision around the inside of the mouth, leaving a good half-inch of lip attached. Either way is sufficient as long as enough lip is left. The skin should then carefully be detached at the nose.

Now the skin is off the head and ready for detailing. Again, this can be left until you reach the taxidermist. If you want to continue, then you must open up the meaty area of the lips, or, as phrased in the business, "split the lips so that they can be salted." Any meaty areas must be opened up or diced (a criss-cross slicing done with the knife to let the salt work into the

meat). The ears must be turned inside out like a stocking and the cartilage left in the ear. This is a difficult process for the amateur and can also be left as long as the skin can be kept cool until you reach your destination. If you have completed all the above, then salt the skin down. You don't need twenty-five pounds of salt! A three pound bag of salt is sufficient as long as the salt is rubbed into the hide, especially around the ear butts, eyes, nose, and mouth area. Make sure all meat has been taken off skin before salting and dice the brisket area to open up the thick cartilage so the salt can do its job. These are all basic methods. Do not put the skin at any time in plastic bags. Do not let the skin get heated and keep it out of the sun. Salt in a cool, shaded place.

Skinning a sheep for a lifesize mount encompasses the same techniques as mentioned with the exception that you do not cut around the body. That is logical. You have the sheep on its back and make a cut from the bottom of one hoof on the back leg, up the leg and continue across just in back of the scrotum and continue down the other back leg until you reach the hoof. From this incision, you make a cut forward, going around the scrotum, down the belly until you reach the incision where the front legs were cut the same as the rear legs. The skin can then be separated from the flesh, always pulling away and only cutting the membrane that holds the skin to the flesh. In the tail area, an incision can be made under the tail only. Do not make an incision from the tail down the bell. The butt area of the sheep should be left intact. This eliminates a lot of unnecessary sewing. Of course, the head and neck area is skinned as mentioned earlier in the caping process. This method for skinning a fullmount animal is used in just about all cases. The method I most prefer is called the Dorsal cut.

The Dorsal cut is very simple and probably the best used in long haired, hoofed animals. It decreases the sewing needed to complete a mount and little stitching will ever show. This is a museum method and well used in quality mounts. The first cut is from the base of the tail all the way up the middle of the back until you reach the horns of the sheep. The only other cuts made in the animal are up the back of each leg to the first joint. The skin is pulled down around the body and skinned in one piece. When the joints in the legs are reached, the skin will not pull down anymore. So, you cut the leg joints and the legs are detached from the body along with the skin. I am assuming that the head has already been skinned at this point as explained earlier. When the skin is detached from the body, the leg bones are pulled through the incisions made behind the legs and skinned down to the hooves and the bones taken out of the hooves. If you feel that you cannot skin out the hooves properly, leave them until you reach your taxidermist. Again, I do not like to have the skin salted, basically because when improperly skinned, the salt hardens the tissue and any corrections that need to be made cannot be done in the studio. If you feel that you will not be able to reach a taxidermist before the skin starts to spoil, then salt it in a cool place until the moisture starts to be pulled from the skin. The best way to transport the skin is in a burlap

bag that will breathe and let air contact the skin. Do not put a salted skin in the freezer and do not put a fresh skinned animal in the freezer. Always make sure all the body heat is out of a skin before you freeze it. Spoilage can occur. In a field situation, taking the skin off quickly and airing will dissipate the body heat quickly.

I hope this has not confused you. With a little care, you can assure yourself that your trophy will not spoil. It is your duty as a sportsman to conserve the skin as best as possible as the animal you are hunting is rare and should be treated as such. The trophy should be saved for posterity and also educational purposes. There is nothing finer then seeing a well mounted trophy on the wall to bring back memories of times afield.

BRIEF HISTORY OF THE
SOCIETY FOR THE CONSERVATION OF BIGHORN SHEEP

By Loren Lutz

Organized in 1963, this is the first, longest active incorporated group of citizens for the benefit of bighorn sheep.

Its first purpose was to publicize the plight of the bighorn, an accomplishment well documented.

The next project was to identify the problems that wild sheep have - also well documented.

Obviously, the third objective was to solve those problems.

We have produced documentaries, motion pictures, slide shows, television commentaries, talks, and reams of written words.

We have fought for habitat protection: San Gorgonio, Trail Peak, Mt. Baldy, Martinez Canyon, Coyote Canyon, Teton Wilderness, etc., from Canada south through Mexico.

We were the first civilian group allowed to do biological research on bighorn in the San Gabriel Mountains and the Santa Rosa Mountains.

We have purchased land in Martinez Canyon and have led the fight for a zoological area in the Sierras and a preserve in the Santa Rosa Mountains.

Studies indicated that lack of water was a limiting factor for bighorn reproduction. Over $3,000,000.00 in effort and monetary contributions have been made in the deserts since 1970.

Thirteen bighorn transplants have been made during this time, all successful.

The estimate made in 1883 of bighorn population in California was about 2,000 animals. The estimate in 1963 was about 2,000. the estimate in 1988 is about 5,000 animals.

An example: The Old Dad area in 1970 contained less than 25 sheep. 128 animals have been transplanted from there since our water projects have been instituted. About 250 sheep are still there, one whale of a success story.

Our first statewide sheep count was held in 1969, a massive effort by volunteers. Since then we have had yearly counts. Our San Gabriel Mountains sheep count has had over 100 participants each year for many, many years.

Two wilderness areas, Golden Trout and Sheep Mountain, were directly organized by the Society.

We are also directly responsible for legislation leading to the

control by the Department of Fish & Game of this wildlife species and have had successfully introduced legislation for water source protection and burro removal.

Our goal, "10,000 by 2000", will be accomplished. The population will double by the year 2000.

Our latest endeavor has to do with harassment by Earth First! and Greenpeace fanatics and legislation protecting the rights of citizens to pursue their own goals. A long term effort of the Society came into being when legislation was enacted to give control of the wild sheep, with herd management plans, to the Fish and Game Commission - something many people said would never come about. Subsequently, a bighorn hunt was authorized by the Fish and Game Commission. Some groups decided that they would try to illegally stop the hunt.

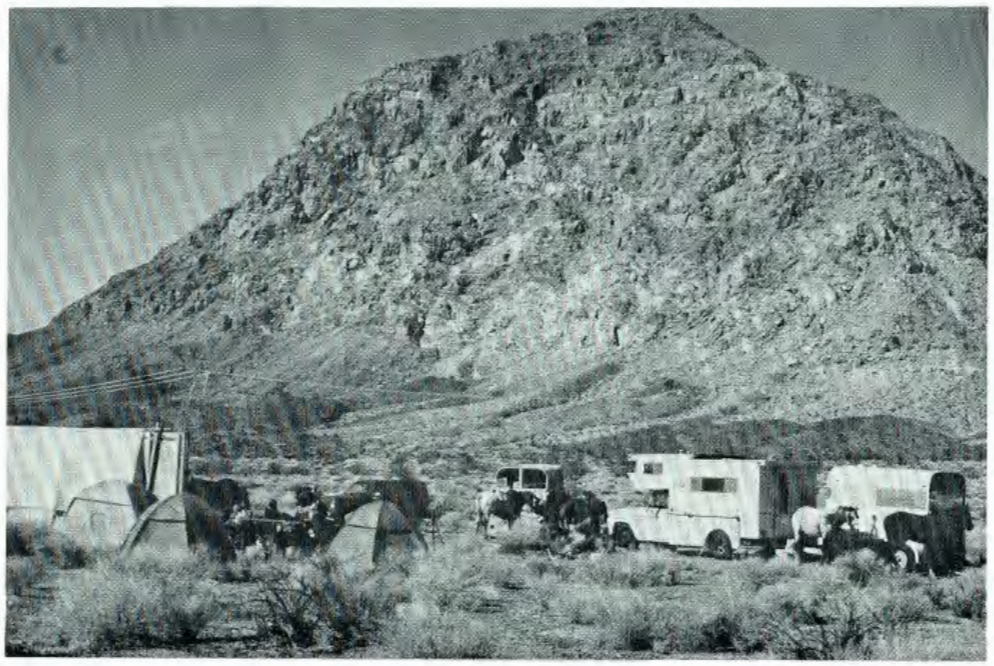
In order to protect the legal hunters rights, Assemblywoman Doris Allen introduced A.B. 3156 - a bill designed to stop hunter harassment - another Sheep Society goal. It was passed by the legislature in August of 1988.

For more information:

3113 Mesaloa Lane
Pasadena, CA 91107
(818) 794-7680

or

4139 W. Big Tujunga Canyon Rd.
Tujunga, CA 91042
(818) 352-4087



"Sheep Camp"
The Society for the Conservation of Bighorn Sheep (courtesy Elk Track Ranch) provided free guiding service on California's first modern bighorn hunt.

A CALIFORNIA DESERT RAM HUNT

By Bob Levett

On August 22, a letter from the Department of Fish and Game arrived congratulating me on being selected to receive one of the coveted bighorn sheep permits. I was to hunt Zone 2, the Old Dad Peak Mountains and Kelso Peak. This was almost unbelievable luck. Later I learned the odds against drawing were more than 500 to 1.

Soon it was time to attend the hunt orientation held at Camp Cady. Excitement was running high as the fortunate hunters had a chance to meet each other. The program was opened by a brief history of the bighorn sheep program. The hunters were instructed on hunting techniques, trophy judging, photography and zone boundaries. At the end of the class we were presented our permits. Sunday the hunters were taken out to their hunting zones. We were shown the hunt boundaries and which roads to use. We had time to glass for sheep and all hunters saw sheep.

After the orientation, it was time to get ready for the hunt. I jogged, climbed stairs and did quite a bit of shooting. Many people at work wondered who was the nut climbing up and down the stairs every morning.

I met my guide Loren Lutz on the way into the hunting area. We arrived in camp after dark because of some difficulty in getting through sand in the wash. Camp was a welcome sight. Everything was set up and a big fire was burning. Loren's son Kennis, who is a Wyoming outfitter, and his two wranglers Curt and Willy were there to greet us. We hurried to put away our personal gear as the steaks were going on the fire. After dinner we swapped hunting stories, and turned in early as heavy rain began to fall.

Saturday morning was beautiful, hardly a cloud in the sky. After a big breakfast, the horses were saddled and Loren, Kennis and I headed up the wash. Soon we found a group of sheep. We located several rams, but only one was legal. I elected not to take this ram as his horns were thin and still developing.

In the mid afternoon we spotted two non-hunters off in the distance. We were not bothered, but it was a sign of things to come. We continued to hunt and found some good rams. They were moving away and heading up the mountain. Time was against us, not enough light left to begin a stalk. We studied the rams for a while and marked their location.

Sunday morning we returned to the same general area. After an hour of glassing we saw a tremendous ram. He was standing a third of the way up the Old Dad Mountains and looking right back at us. The ram sported massive horns dropping well below his jaw and curling all the way back to his eyes.

The ram was slightly out of range for my 7mm mag. I could have chanced a shot but didn't want to risk wounding and possibly losing such a magnificent sheep. We waited and watched, finally

the ram bedded down. Loren devised a plan. He would stay with the horses and distract the ram. I would make a large circle and then climb up the mountain to a position above the ram. Everything was going according to plan. I was almost in position on the mountain when all hell broke out below me. I could hear airhorns and whistles blowing and people yelling at me. The ram ran off and was not seen again.

The three protesters returned to camp with us and were turned over to the authorities. We returned to the hunt this time hunting the low lands. Near dusk we jumped another very large ram. This ram wasted no time and ran over a ridge before I could get off my horse.

Monday we encountered even more problems with protesters. Kennis and I were after 3 more good rams when two protesters showed up and forced us to call off the stalk. We returned to camp with the protesters. They were carrying noise makers and CB radios to communicate with other groups. By now I was determined not to let these people ruin my hunt. We went out again.

Late in the afternoon we hunted the low lands looking for the big ram. We spotted a nice ram and while I was trying to decide whether or not to take him the big ram and another raced out below me. I tried to shoot but the sun going down behind me made my scope useless.

Tuesday I felt lucky. Larry had taken his ram on Sunday. He brought the heart and liver from his ram to share with us for breakfast. After a great meal and a lot of celebrating we headed out. About a mile from camp Kennis spotted two rams. They were on a ridge standing about 300 yards away. I leaped off my horse and got into a shooting position using rocks for a rest.

Meanwhile Loren and Kennis were glassing the rams, giving me advice. The ram on the left was larger and had a wide flare which I like. I decided to take the ram. I held the cross hairs at the top of the shoulder and eased the trigger back. The ram went down and I had a trophy of a lifetime.

After a lot of picture taking we returned to camp. The afternoon was spent at the check station. The ram was inspected, weighed and measured by Department of Fish and Game biologist Vern Bleich. My ram was the fifth taken. It scored 163 3/8ths making me one happy hunter.

I would like to thank all BLM, Department of Fish and Game employees and members of the Society for the Conservation of Bighorn Sheep who helped make this hunt so successful. Also, I would like to express a special thank you to Loren Lutz, president of the Society for the Conservation of Bighorn Sheep and his son Kennis, who is a Wyoming outfitter operating Elk Track Ranch, for making my dream come true.

TOP:

California Bighorn hunter Bob Levett (L) and Guide Kennis Lutz of Elk Track Ranch. Old Dad Peak is in background.

MIDDLE:

California Bighorn hunter Dennis Selich 1987. Photos by Loren Lutz.

Debi Jardstrom with Floyd Krank (L) and Gerry Nichols.

Photo by Debi Jardstrom.

CALIFORNIA DESERT RAM HUNT

By Debi Jardstrom

Being drawn for a permit to hunt the elusive Desert Bighorn was the most exciting feeling I've experienced.

Looking at me through that white envelope window. Congratulations! What else could it be from the State of California Department of Fish and Game.

My heart was beating so hard I couldn't talk. I called a friend to tell them, no voice. When I did regain composure, I proceeded to go on and on about sheep hunting. My friend then replied, "What is this for Deb, 4-H"? Called the wrong friend.

Eight permits were drawn and one permit was auctioned to hunt Desert Bighorn Sheep. It has been 114 years since the State of California has allowed sheep hunting in California. Desert Bighorn are coming back under the management programs of California Department of Fish and Game, Society for the Conservation of Bighorn Sheep and Bighorn Institute, but more money is needed for water hole projects, planting more feed, and transplanting healthy sheep where they are needed in their ranges. $93,000.00 was raised through the selling of license applications and the one tag which was auctioned.

Being a hunter, I am personally involved in helping with the preservation of these magnificent animals. Without money, which is raised this way, these programs are operating on a shoestring.

The Legislature passed a bill to allow nine sheep to be taken out of two areas for five years (nine sheep per year). Samples of the blood, heart, liver, rumen, parasites, etc. were taken from all animals for research and surveying of eating habits. I feel strongly about writing about these facts so that people who don't hunt will read this know that most hunters care about the future of wildlife. California sheep need extra special care.

On with the hunt...

December 5, 1988 - Hey neighbor! 3 a.m. It was Floyd Krank of Aravaipa Outfitters from Arizona. I had booked with Floyd based on information I had read on his outfit taking the largest rams in Arizona consecutively for five years. None were ever for Desert Bighorn in California.

Mary and Floyd Krank met Arnold Jardstrom and myself three days prior to opening day. Camp was set up in a matter of hours and Floyd and I were on our way up the mountain. Arnold and Mary drove around to the other side of the mountains to scope (Mary was camp honcho, Arnold an excellent guide). We spotted several rams before opening which were promising.

Opening day - we spotted two rams, stalked for three hours, not big enough. Wait, three more rams just fled over the hill. One

heavy broomed ram, score 170-172 B+C. Let's keep hunting. (We took pictures of these rams through spotting scope to be viewed later.) Four miles.

Second day - rams, were not big enough. One ram 3/4 horn gone. Beautiful weather. One tarantula. All rams seen second day were seen before. Each ram has identifying marks and color.

Third day - should have taken this ram, 171-174 B+C, one horn longer. Winds 70-100 m.p.h. in peaks and saddles. Tracked for several hours. I had a chance at 50 yards, but held off, 75 yards, but held off. Tomorrow, 180 point ram (I hope). Four miles.

Fourth day - two small rams, sunny, five miles, tomorrow.

Fifth day - four rams, two miles, tomorrow.

Sixth day - we hadn't been seeing too many ewes, but on this day we spotted 47 ewes, 8 rams and 2 lizards. No size, six miles.

Two more people joined our camp that had been hunting in Arizona in the Kofa Mountains, Gerry Nichols and Linn Stewart. Gerry had been guiding Linn for Aravaipa Outfitters. Linn had been drawn on an Arizona permit (more on these two).

Seventh day - protesters start to show up the day before, so we prepared ourselves for what could and might happen. Linn Stewart had taken a 169 B&C ram in the Kofa Mountain Range. He brought his skull and horns with him when they joined our camp.

Floyd and I borrowed his horns. We put them in the back of Floyd's Blazer, drove down the road, sure enough, protesters! We then took the horns out of the back of the Blazer and I posed for pictures with Linn's horns. Fish and Game and BLM then came along (following the protesters) and they posed for pictures with me. It sure got them off my back for five days. They assumed it was my ram being as how I was the only woman hunter drawn for a permit to hunt. They should have asked if it was my sheep.

Ninth day - Hostine, this is what we named this old ram. Age, maybe twelve years old. Wide flare, length 36-38 inches. Stalked, watched and waited, too dark to shoot and too windy, three miles, beautiful ram. We were to stalk this ram three more times with no success in the next six days.

Tenth day - ten rams, so size, small rams, four miles, sunny, windy.

Eleventh day - we went back after Hostine (meaning wise old one). Floyd says Hostine would score low 160's, I say 171 B+C, we'll see. No luck. Very cold, seven miles.

Twelfth day - rained hard all night, snowed, then the ground froze. Yes, this is the Mojave Desert we're in. Scouted from opposite side of mountain range off the desert floor. Five rams,

too far away to judge.

Thirteenth day - I couldn't keep from thinking of that fine old ram, Hostine. Floyd, Arnold and I located him after a half a day of hunting. This ram meant a lot to me, being as how he was so wise and old. I think he knew I wouldn't take him home with me by the chances I'd had for him and didn't take. I'd come within 200 yards on the thirteenth day, when a military helicopter came overhead and spooked him and another ram. White butt and horns going over the next ridge, lost sight of them today. Time was running out on this sixteen-day hunt.

Fourteenth day - everyone had filled out their tags. I was the only one left. Each night, at camp, Floyd and I would sit by the campfire and review the day, as well as tomorrow. Only two more tomorrow's left. Gerry, Linn and Mary had driven around to the opposite side of the mountain to scope from the bottom. Arnold, Floyd and myself made the hike back to the top of the ridges. Spotting the sheep from the bottom isn't easy, getting to them when they've spotted you from the top is even more difficult. That's where getting up at 3 a.m. everyday and being on top before sunrise is important. We spotted and stalked seven rams this day, none were what I was looking for.

Back at camp, Gerry told of seeing a nice ram with three other rams on the opposite side of where we had hunted that day.

Fifteenth day - Floyd, Arnold, Gerry and myself left camp at 4 a.m. with positive attitudes, today is the day. We spotted four rams Gerry had seen the day before. Floyd and I left Arnold and Gerry to wait out our stalk, they stayed behind on the desert floor with spotting scopes. It had started to rain again and the fog was setting in on the top of the mountains. There is very little cover, if any, in this area, so we relied on sounds of the desert to camouflage our movements.

It took three hours to get close enough to judge their size. Get down, the sheep were only 200 yards away. I couldn't get a shot at the angle I was lying on the mountain. We then moved around the side hill for better position. This time they were 700 yards away. Boy, were we in a bad place. One ram (the smallest) was looking in our direction. He had us pinned on the side of this hill, face down in dirt for 20 minute intervals at a time. They knew something was wrong. The other three fed and moved on. After an hour, the spotter ram joined the others. "How good a shot are you, Deb?" Floyd asked. I wasn't going to take that kind of chance. We had to get closer.

The rain muffled the sound of us moving as it hit on the sheep's ears. Jets flying overhead also created more noise for us to move by. 700 yards away meant we had two miles of round and downhill, then uphill, to get close enough. We were getting within shooting distance. Floyd had just got to the point we were going to drop our packs, he looked down at me, behind him, I motioned for him to set up his spotting scope, when, "Deb, there they are!"

The four rams had backtracked and come back through the same saddle they had fed through two hours earlier. They saw us. Which one was the largest? No time to get a rest. They were moving out on a dead-run. Putting distance between us each second. 300 yards-350 yards. "Third on back is the biggest," Floyd says. I dropped back on my pack, first shot too high, next shot, right on!

Arnold and Gerry were four miles away and didn't get to see all that was going on. They could see Floyd and myself through their spotting scopes and had heard two shots. Arnold told Gerry, "She got him, Deb wouldn't give that kind of hug for nothing." I think I hurt Floyd, I was so excited.

It took us 45 minutes to get to my ram, what a beauty. He isn't as big as four others I passed up, but he was mine.

The Safari Club scored him at 167-5/8, am I ever proud. I only have the Dall Sheep and Stone Sheep to complete my grand slam.

I drew a permit in 1984 in Wyoming and placed third that year with the Wyoming Outfitters Association. My Rocky Mountain scored 172-5/8 B+C. I'm on the downhill slide of my slam now.

Being in the desert for 23 days prior scouting trips and hunting made me realize how much we can do to help these sheep, and already have to make this dream come true for future generations.

This one is for you Papa! I know you would have been very proud. Again, thank you for making this possible: Dick Weaver and Vern Bleich of California Department of Fish and Game; and the Society for the Conservation of Bighorn Sheep and the Bighorn Institute.

Note: Debi Jardstrom was the first woman to hunt Desert Bighorn in the state of California in 114 years. She also hunted Stone Sheep in British Columbia in 1983 with her husband, Arnold; Dall Sheep in the Yukon in 1980; and California Bighorn in British Columbia in 1974.

The results of California's first Bighorn Hunt 1987. Mr. Moore showing off his son's sheep. Note parallel structure of horns. Photo by Loren Lutz.

SUGGESTED READING

The literature on mountain sheep is voluminous, ranging in scope from entire treatises dedicated to the hunting and conservation (O'Connor 1974) of this species, to massive works concerned primarily with the behavior and evolution of this species (Geist 1971). I have assembled below a list of 10 works which I feel will be of the greatest value to California sportsman-conservationists concerned with the biology of this species, as well as its history and its harvest and conservation. It was necessary to limit the list, or it could on forever; with few exceptions, these works are readily available and should be in the libraries of all conservationists interested in mountain sheep in California. Proper citations are provided in order to facilitate the acquisition of these works.

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NOTES