

ANATOMICAL SPECIMEN COLLECTION BY PREPAID POSTAL ENVELOPE

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Considerable quantities of biological material have been collected by state and federal agencies concerned with wildlife management. Much of the basic information has been recorded from anatomical specimens which were laboriously collected, labeled and preserved by field workers. Many devious means have been used in an attempt to lower the cost of these efforts. Checking stations located at central points of control have increased the efficiency of the technician by enabling him to contract many people while remaining in one place; however, some localities have extensive road systems that do not have a central focal point and the checking station method cannot be used efficiently. Attempts have been made to overcome this by mailing questionnaires which request that the hunter or fisherman record information relating to his creel or bag and then mail the completed form back to some central point for tabulation. This system has met with varying degrees of success but there is always a question of the validity of the individual report. In 1951 one of the projects of the Montana Cooperative Wildlife Research Unit required a large number of pronghorn antelope jawbones to be used in a study of age determination. It was important that these jawbones be collected randomly from herds ranging over an area of approximately fifty thousand square miles; therefore, it was believed that checking station collecting would be expensive and ineffective. The collection was made by prepaid postal envelope and the results were considered quite successful. This method has since been used by the Tennessee Game and Fish Commission to collect several types of anatomical specimens. Data concerning quail, grouse, and white-tailed deer were generously provided by Mr. Eugene Legler and Mr. Thomas Grelen of the Game Management Section, Tennessee State Game and Fish Commission. A contribution of the Montana Cooperative Wildlife Research Unit, Missoula, Montana and the State Game and Fish Commission, Nashville, Tennessee.

METHODS

Prior to the hunting seasons circulars and specimen containers were distributed to hunters of each of the species being studied. In the Montana antelope jawbone collection random distribution was possible because all hunt permits (9,000) were issued from a central office and the circulars and envelopes were simply attached to every third permit as they were issued. In the Tennessee collection, materials were distributed by conservation officers to known hunters throughout the state.

The containers were 6½" × 9½" business reply envelopes printed in conformance with postal regulations. This was done to facilitate the payment of postage for packages of varying weights. Sample envelope and circular are shown in Figs. 1 and 2, respectively.

The circulars explained the purpose of the collection and outlined the procedure to be followed if the hunter wished to cooperate.

HUNTER'S NAME AND ADDRESS _____ _____ _____	<div style="border: 1px solid black; padding: 2px;"> FIRST CLASS PERMIT NO. 2124 Sec. 34.9, P.L.&R. Helena, Montana </div>
<div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 80%;"> BUSINESS REPLY ENVELOPE No Postage Necessary If Mailed in the United States </div> <p style="text-align: center; margin-top: 5px;">— POSTAGE WILL BE PAID BY —</p>	
ANTELOPE JAWS	Fish and Game Department Helena, Montana
Date Collected _____ Locality _____ County _____ Sex _____	

Fig. 1. Sample envelope.

As the containers were received the specimens were examined cataloged and tabulated.

RESULTS

Montana Antelope Jawbone Collection 1951

Total number of containers issued	3,000
Total number of jawbones returned	1,322
Percent returned	44

Tennessee Bobwhite Quail Wing Collection 1953

Total number of containers issued	2,070
Total number of wings returned	1,884
Percent returned	86

Tennessee Ruffed Grouse Wing Collection 1953

Total number of containers issued	850
Total number of wings returned	87
Percent returned	10

ATTENTION HUNTERS!

PLEASE SEND US THE LOWER JAWS FROM YOUR ANTELOPE

We are asking you to become a Big Game Biologist for one day. Your pay will be better hunting in the future.

WHY? We want to know the distribution of age groups in the several herds of antelope that you'll be hunting this fall. By a study of tooth development and wear, we will be able to determine the approximate age of your antelope. With a sufficient sample of jaws from different herds, we intend answering such questions as:

1. What is the average life span?
2. What percent of last year's fawns are alive this November?
3. What percent of last year's yearlings are alive to date, and so on for the older age classes?
4. How long do antelope live in Montana when allowed to die of old age?
5. Is there a high mortality in different herds that cannot be accounted for by your kills?
6. Is a heavier or lighter harvest needed?

HOW you can help us answer these questions:

1. By removing the lower jaw from your antelope and sending it to us in the envelope provided.
2. By carefully supplying the information asked for on the face of each envelope, i.e., date collected, locality, county and sex.
3. Return envelope with jaw, no postage necessary; or turn over to a representative of the Fish and Game Department.
4. If you would like to know the approximate age of your animal, please put your name and address on the envelope; at the conclusion of this study, we will mail you our estimate.

THANK YOU FOR COOPERATING!

Fig. 2. Circular

Tennessee White-tailed Deer Jawbone Collection 1953

Total number of containers issued	870
Total number of jawbones returned	309
Percent returned	36

From the specimens received the following kinds of information were available from hunt areas in which both sexes were taken.

1. Statewide, county or local distribution.
2. Composition of the hunter take by age classes.
3. Sex ratio of hunter kill.
4. Average longevity.
5. Indications of reproductive and survival rates (age class ratio).
6. Hatching dates.

Breakdown of Returns from Antelope Hunters Only

Total number of containers received	1,322
Total number with complete information	1,224 or 92.6%
Total number with incomplete information	98 or 7.4%

Breakdown of Incomplete Information of Antelope Jawbone Collection

Jawbones not enclosed	9
Location not given	13
Sex not given	62
Unsuccessful hunter	8
Hunter did not hunt	2
Hunter used head has trophy	4
Total	98

Total Postage and Material Cost of Antelope Jawbone Collection

3,000 printed envelopes = \$15.75/m	\$ 47.25
1,322 received at postage cost of	258.64
Total	\$305.89
Cost per envelope returned	\$ 0.23

CONCLUSIONS

1. Some types of anatomical specimens may be successfully collected by using prepaid postal envelopes.
2. Tangible evidence is received that verifies the reported kill.
3. The method described has a distinct economic advantage over checking stations when sampling large areas with extensive road systems.
4. The specimens received may be carefully analyzed whereas in field checks only a cursory examination may be possible because of time limitations.
5. There is possible error in the reported sex and location of kill.
6. In age determination studies many different field workers frequently examine animals in the field without collecting specimens thereby introducing a bias resulting from individual variations in applications of techniques. By using the method described here only one person need examine all specimens thereby eliminating this bias.
7. If instructions are carefully prepared, hunters can and will collect usable biological information.